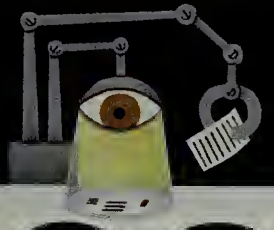

**BORDER PATROL**
Content filters can prevent sensitive data from leaking outside the corporate network. **PAGE 32**

**PATENT PIONEER**
Martin Goetz doesn't mind software patents but says there needs to be a real invention. **PAGE 24**

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**KATRINA: SIX MONTHS LATER**

# IT Execs Race To Shore Up Their Systems

## Look to boost resiliency before the next hurricane season; staff shortages continue

**BY PATRICK THIBODEAU AND HEATHER HAVENSTEIN**

ALONG THE storm-ravaged Gulf Coast, six months after Hurricane Katrina struck, there's a big deadline ahead for IT managers: June 1, the start of the next hurricane season.

As Mardi Gras was celebrated in a still-recovering New Orleans last week, more than a dozen IT managers in Louisiana and Mississippi said they are rushing to build more resilient systems, improve their companies' communications capabilities and apply the many lessons they learned from Katrina.

There's a particularly strong push to increase data backup capabilities, especially via online replication to other sites, and to set up wireless and satellite communications systems, the IT managers said. And the work is being done with a sense of urgency because of

*Katrina, page 14*

> **"There is not ever going to be the perfect disaster recovery plan. You can't write the perfect script, and the next time will be different.**
>
> **JAN RIDEOUT**, CIO, NORTHROP GRUMMAN SHIP SYSTEMS

**INSIDE**

Katrina gave business executives a better appreciation of IT's value, tech managers say. PAGE 16

A panel discusses emergency communications issues that have yet to be resolved. PAGE 20

**Slogans aren't enough! Learn how to turn your IT shop into a real innovation machine.**

Page 43

# Jump-start Innovation

**ALSO** Premier 100: IT managers say technology isn't driving their efforts to innovate. **PAGE 6**

# Users Buying Into Free 'Express' Databases

## Top vendors look to block gains by open-source rivals

**BY ERIC LAI**

Missouri State University's school of information systems and Web start-up Savvica Inc. don't have a lot in common apart from tight budgets. In the recent past, their spending limitations likely would have meant choosing open-source software such as MySQL or Postgres as a database.

But last month, both the university and the e-learning firm eschewed open-source technology, opting instead to install commercial databases — albeit free, stripped-down versions, which all of the top database vendors are now offering.

"Everything's so much more solid now," said John Green, president of technology at Toronto-based Savvica. Burgeoning Web traffic was causing the company's MySQL server to crash continually. Also, its e-learning applications are written in Java, which Green felt wasn't well supported by the open-source database.

Instead of adding more MySQL servers, Green decided to roll out three installations

*Databases, page 61*

**INSIDE**

Ingres CTO Dave Dargo contends that the momentum of open-source databases isn't slowing. PAGE 23

NEWSPAPER

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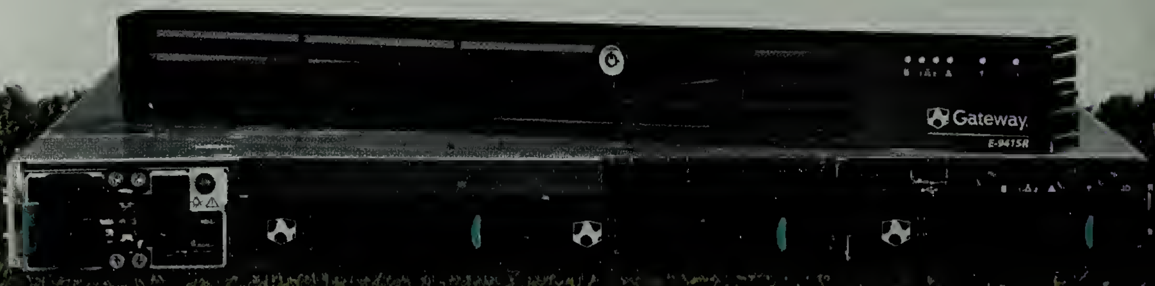

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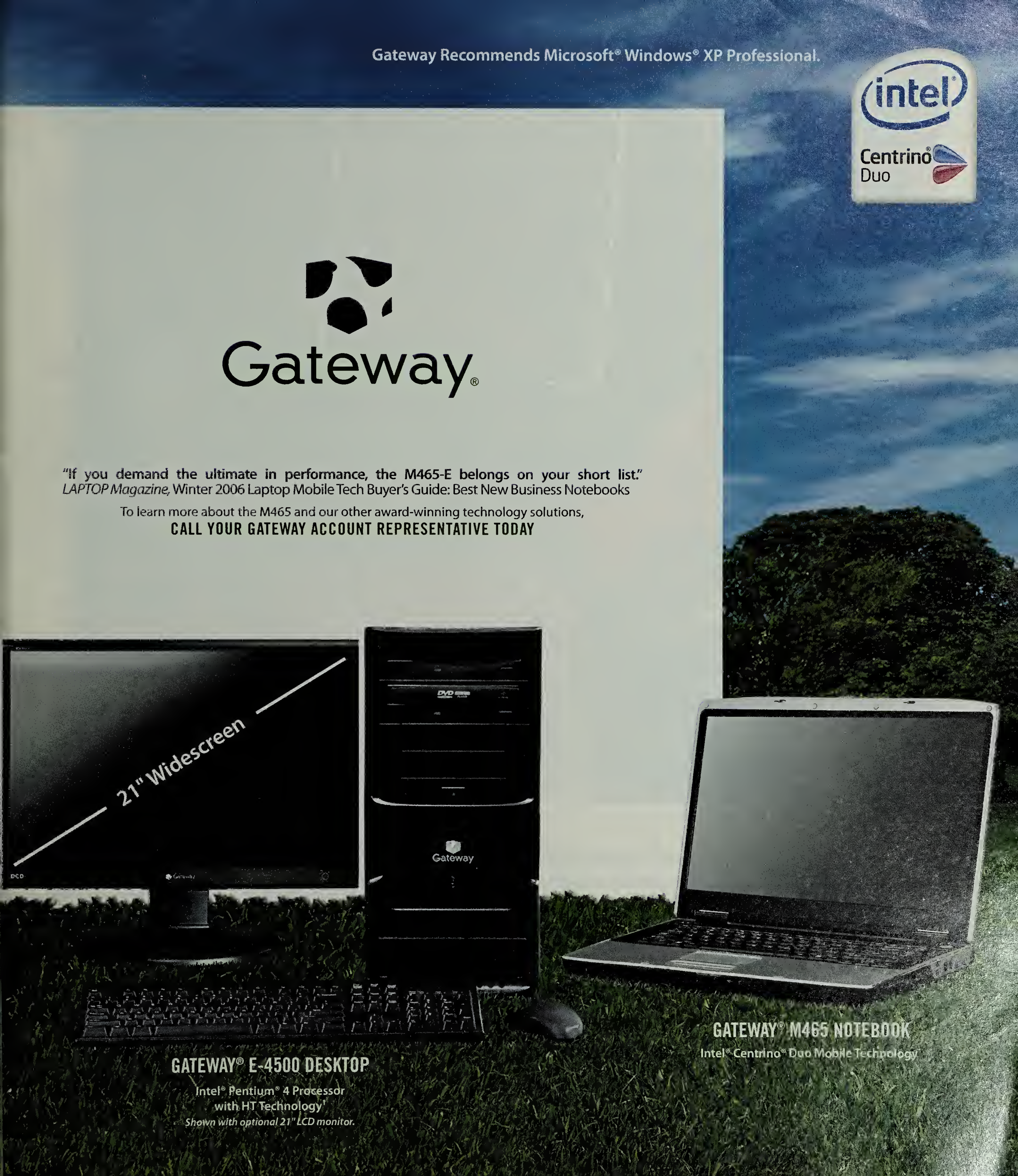
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# CONTENTS

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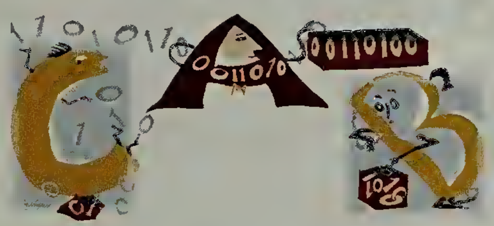

## Better Grade for Smart Switches

**In the Technology section:** Intelligent storage switches are maturing, and the technology is being accepted by an increasing number of users. But it may be a year or two away from making a difference at the heart of SANs and some other critical applications. **Page 29**

## The Sweet Smell of Success

**In the Management section:** Skunk works can help you develop an innovative project with less risk that the plug will be pulled prematurely. Here are some of the do's and don'ts. **Page 50**

## NEWS

**6** **IT executives** who plan to attend *Computerworld's* Premier 100 IT Leaders Conference this week said that pushing new technologies on end users is no longer the favored path for IT innovation.

**8** **Breach notification laws** are forcing companies to pay attention to IT security, but there's little consensus on when they should disclose data breaches.

**8** **Q&A: Orson Swindle**, a former member of the FTC, says companies could face a loss of customer confidence in their technology if they don't better protect the data they collect.

**18** **Global Dispatches:** India-based Satyam Computer Services plans to expand its software development operations in China in order to cut labor costs.

**20** **The Sun Grid program** is further delayed by the U.S. State Department's security concerns.

**22** **The theft of** backup computer tapes and disks from an employee's parked car leads to the departure of four workers from an Oregon health care provider.

**23** **Q&A: Ingres CTO** Dave Dargo discusses the former CA unit's attempts to compete with the Big 3 database vendors and outlines the company's open-source product road map.

**61** **At VoiceCon,** Cisco and Avaya will announce plans to support the Session Initiation Protocol and related standards in their unified voice, video and data communications products.

## TECHNOLOGY

**32** **Border Patrol.** An increasing number of companies are using network-based content monitoring tools that analyze traffic for sensitive content and block it from moving beyond the corporate LAN.

**36** **Future Watch: Supercomputing Turns Toward Productivity.** Clusters of commodity processors have come to dominate supercomputing, but some users are beginning to push back. What they need is faster data flow.

**38** **Security Manager's Journal: Job Interview Raises Plenty of Questions.** C.J. Kelly thinks about changing jobs but discovers as she interviews with a prospective employer that the applicant is sometimes better prepared for the interview than the people representing the company she would join.

## MANAGEMENT

**43** **Jump-start Innovation.** There's a renewed emphasis on right-brained approaches to succeeding in today's increasingly global, hypercompetitive, unforgiving business world. Here's what some leading IT groups are doing and how you can light up your own IT shop.

**52** **Bringing Homegrown IT to Market.** Procter & Gamble has long been known for innovation, but lately it's been applying that spirit to marketing some of its own in-house IT products and services. And it's finding that the ROI is more than monetary.

## OPINIONS

**10** **On the Mark: Mark Hall** hears from a CRM vendor who says that whether you're deploying conventional software or apps for wireless devices, you should choose the 10 features that your users need most and stop there.

**24** **Don Tennant** says Corel, which was instrumental in creating the OASIS OpenDocument format, has betrayed users by surrendering to Microsoft and distancing itself from the standard.

**24** **Martin Goetz** isn't opposed to software being patented; after all, he received the first software patent nearly 40 years ago. But he asks why patents should be granted when no invention is involved.

**40** **Douglas Schweitzer** compares the most common broadband technologies to help telecommuters make a choice.

**54** **Paul Glen** notes that most discussions of MBAs center on the credential and the cost rather than the content. He looks at what the coveted degree does — and doesn't — provide.

**62** **Frankly Speaking: Frank Hayes** says users will welcome big changes, as long as those changes don't interfere with the habits that have become a part of their work processes.

### DEPARTMENTS/RESOURCES

| | |
|---|---|
| At Deadline Briefs | 6 |
| News Briefs | 10, 16 |
| Letters | 25 |
| IT Careers | 58 |
| Company Index | 60 |
| How to Contact CW | 60 |
| Shark Tank | 62 |

## ONLINE

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**MOBILE/WIRELESS:** Sandra Gittlen explains how to lessen the impact of all those cell phones, MP3 players and digital cameras hooking up to your network. **QuickLink a8120**

### QuickStudy: VoIP

**NETWORKING:** Voice over IP is a system for delivering digitized voice communications across IP networks. VoIP technology allows phone calls to be made between compatible handsets or on computers with appropriate software. **QuickLink a8100**

### Protect Your Job From Offshoring

**CAREERS:** Survival skills include developing teamwork and communication techniques, becoming familiar with other cultures, and choosing industries and occupations strategically, according to a report by the Association for Computing Machinery. **QuickLink a8130**

### Putting Your Office in Your Pocket

**NETWORKING:** Columnist Bert Latamore explains how two hospitals use Wi-Fi to give doctors and nurses greater mobility. **QuickLink a8110**

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## AT DEADLINE

### RIM Pays $612.5M To Settle NTP Suit

Research In Motion Ltd. late last week agreed to pay $612.5 million to NTP Inc. to settle the long-running legal fight between the two companies. RIM said the settlement includes a perpetual, fully paid license for all NTP patents. The two companies have finalized the deal and ended all litigation. The dispute with NTP, a patent-holding company, had threatened to halt RIM's BlackBerry e-mail service.

RIM last week also warned that operating results for its fourth quarter, which ended Saturday, will fall below earlier expectations, primarily because of the uncertainty surrounding the NTP litigation. RIM estimated that it got between 70,000 and 130,000 fewer new subscribers than expected during the quarter. The company expects to report revenue of $550 million to $560 million in the quarter versus earlier estimates of $590 million to $620 million.

### Intel Issues Q1 Revenue Warning

Intel Corp. has warned that its first-quarter revenue will be lower than expected. The company said sales for the three months ending March 31 will be between $8.7 billion and $9.1 million, compared with an earlier estimate of $9.1 million to $9.7 million. Intel blamed the shortfall on weak demand and a loss of market share. Analysts blamed competition from Advanced Micro Devices Inc. for the loss.

### ACS Wins $200M IT Outsourcing Pact

Affiliated Computer Services Inc. has been awarded a five-year, $200 million IT outsourcing contract from MeadWestvaco Corp., a supplier of packaging products in Stamford, Conn. The contract calls for ACS to centralize and consolidate MeadWestvaco's IT infrastructure. ACS will also provide data network management, help desk, security administration and disaster recovery services.

# Technology Loses Its Drive In IT Innovation Processes

## IT execs shift focus to collaborating with users, meeting business needs

BY TODD R. WEISS

LISTENING TO end users describe how they do their jobs and then watching them at work has led to some eye-opening moments for Franz Fruehwald, CIO for the Catholic Human Services unit within the Archdiocese of Philadelphia.

Instead of just making untargeted, wholesale changes to systems, Fruehwald and his staff have learned lessons from archdiocese employees and worked with them to determine how to best meet their business needs.

"In the past, innovation has been heavily technology-driven, with IT being the primary driver," Fruehwald said last week. But that approach "had mixed results, with some users feeling that IT has forced certain projects and technologies on them," he added. "Today, we are more collaborative."

That mind-set was largely echoed by several other IT managers who, like Fruehwald, plan to attend *Computerworld*'s seventh annual Premier 100 IT Leaders Conference, which starts today in Palm Desert, Calif.

### Beyond Flashy Hardware

In a survey of Premier 100 honorees and other prospective attendees that was conducted via the Internet in advance of the conference, 51% of the 162 respondents said that they think their IT departments are more innovative than their companies are as a whole (see chart).

But in interviews last week, six IT managers said technology innovation nowadays involves much more than springing flashy new hardware and feature-filled software on end users.

To foster innovative thinking inside the Philadelphia Archdiocese's IT department, Fruehwald encourages all of his staffers to bring forth ideas, suggestions and recommendations, which are then considered and hashed out. "Oftentimes, we ignore the folks in the trenches who we rely on for the day-to-day operations, [but] their ideas and suggestions are as valuable as those of management," he said.

### New Thinking

**Which of the following methods are you using to foster innovation within IT?**

**57%:** Offer IT staffers training programs on new and emerging technologies.

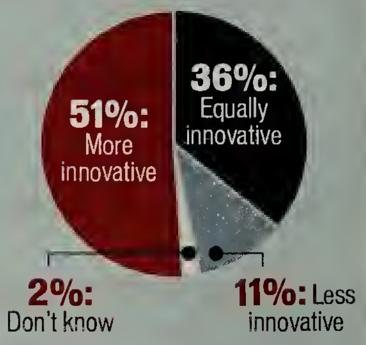
**46%:** Set up a dedicated group within IT to work on pilot projects and emerging technologies.

**41%:** Locate IT staffers within business departments to work directly with end users on projects.

**35%:** Outsource routine tasks so internal IT workers can focus on new projects and technologies.

**7%:** Have not implemented any specific methods to help foster innovation.

**Is your IT group more or less innovative than your company as a whole?**



**BASE:** 162 IT and business managers who are Premier 100 honorees or have registered to attend this week's Premier 100 IT Leaders Conference. The respondents were surveyed by *Computerworld* via the Internet last month. Multiple responses were allowed on the first question.

Fruehwald noted, though, that the process isn't limited to IT itself. By witnessing how end users worked, IT staffers learned that some were entering data into spreadsheets they kept for themselves, while others were writing information on paper and then filing the papers into three-ring binders. None of the data was available on an organizationwide basis, nor was it easily usable or searchable by other people who needed it, Fruehwald said.

The observations led to the deployment of client management software from Harmony Information Systems Inc. in Reston, Va., via a phased rollout that was completed last year. Fruehwald said the Harmony software stores data in a single repository that all the end users can access — something they could barely imagine doing before.

Todd Norrgard, director of IT at Watertown, N.Y.-based Car-Freshner Corp., agreed that IT innovation is only important if it increases business efficiency.

"We've been told not to sell IT — just recommend solutions for known problems," he said. "There's got to be a tangible payback, or innovation isn't a sufficient business case for implementing something new."

The air-freshener maker's approach comes from lessons learned over the years, according to Norrgard.

"In the past, IT has attempted to drive innovation by providing new technology to users, even when there hasn't been an identified problem," he said. "However, the result has been that our users tend to lose focus on what they've been hired to do. They *do* IT, instead of using IT to augment their daily business tasks."

> **"We've been told not to sell IT – just recommend solutions for known problems.**
>
> **TODD NORRGARD,** DIRECTOR OF IT, CAR-FRESHNER CORP.

IT leaders need more political skills now and have to "be willing to take a humble approach if that's what it takes to get the end result," Norrgard added. "IT cannot dictate, and sometimes cannot be the face out front [on projects]."

Technology is still a big part of the innovation equation at Talley Defense Systems Inc., a maker of weapon systems and other products in Mesa, Ariz.

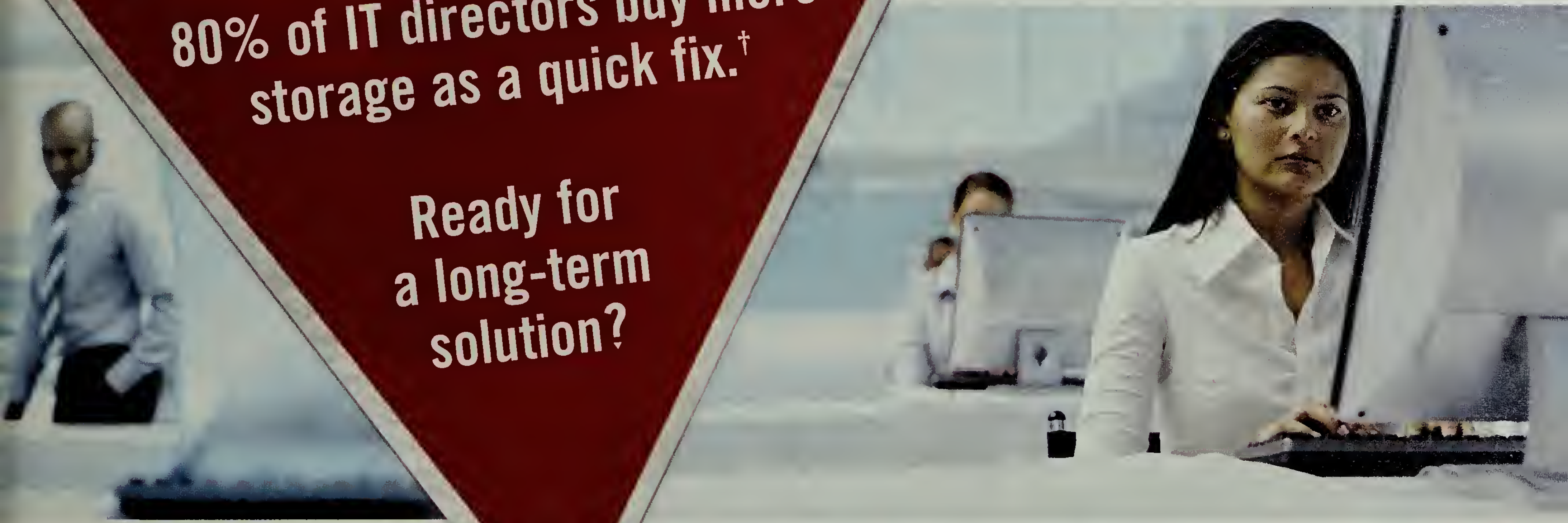
Jim Speer, Talley's director of information systems, said that about half of the IT innovation at Talley is driven by user needs, while the other half is driven by technology "without inputs or recognition from the user community."

Speer added that Talley's IT department definitely leads other operations in the push for innovation inside the company. "We usually find ourselves ahead of the curve," he said. "We provide solutions to our company that [other departments] are not even aware of." Even so, Speer said, the guiding principle at Talley is that technology innovation "is there to help achieve results in the organization." ▸

### MORE ON IT INNOVATION

**Read in-depth stories** about how to encourage innovation within your IT group, the use of IT skunk works and Procter & Gamble's effort to market some of its internally developed technologies to other companies. **Page 43**

**Frank Hayes** says the secret to successful innovation is to make big changes, not small ones. You should think about that every time you dial a phone. **Page 62**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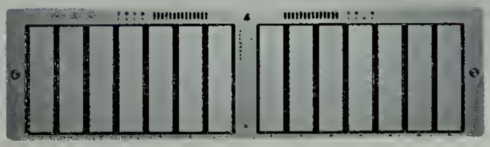

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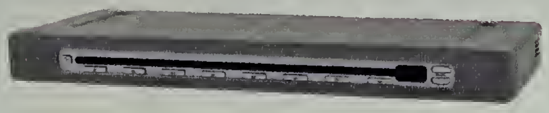

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# Debate Continues on Breach Notification

## Privacy experts, lawyers differ on whether more laws would help

BY JAIKUMAR VIJAYAN

WHILE SECURITY breach notification laws are forcing businesses to take more responsibility for their data, the debate continues over when consumers should be notified of an incident.

On one side are those calling for consumers to be notified of any breach that could expose sensitive data. Others, however, say a high disclosure threshold should be required to prevent overnotification and needless costs.

Franklin, N.J.-based Medco Health Solutions Inc. has come under fire for waiting more than a month to report the theft of a laptop computer containing unencrypted Social Security numbers and birth dates of about 4,300 Ohio state workers and 300 dependents.

The company, which handles prescription drug benefits for state employees in Ohio, reported the Dec. 28 theft to state officials on Feb. 8. The incident prompted Ohio officials to call for a review of the $4 million contract.

Kirk Herath, chief privacy officer and associate general counsel at Nationwide Mutual Insurance Co. in Columbus, Ohio, said that companies "clearly have a responsibility to safeguard customer information." However, he said many state laws have "hair triggers" when it comes to disclosures.

"I really think the standard for disclosure should be a clear risk of danger or harm to the consumer," Herath said.

Others argue that allowing companies to make disclosures based on their assessment of the risk posed to consumers is unworkable.

"Breaches should not be tied to the potential criminal use of the information," said Christopher Pierson, a lawyer at Lewis and Rocca LLP in Phoenix. "I find it highly unlikely that IT professionals, company officials or lawyers would be able to examine the intent of a criminal that has yet to be identified."

There is a growing call for a national breach-disclosure law that will preempt the patchwork of more than 40 state laws that are in place or in the works. Many state laws specify different triggers for notification and set varying requirements on what must be disclosed to whom and when.

California, for instance, requires companies to notify consumers each time their data is compromised. Other states, such as Delaware, Arkansas and Florida, require that consumers be notified of breaches only if the companies believe there is a reasonable risk of harm.

"The good news with these laws is that security incidents are more public and more visible, and that's really motivating companies to do a better job of protecting data," said Kirk Nahra, a board member of the International Association of Privacy Professionals, a group of IT security and privacy workers in York, Maine.

> “I really think the standard for disclosure should be a clear risk of danger or harm to the consumer.
>
> KIRK HERATH, CHIEF PRIVACY OFFICER AND ASSOCIATE GENERAL COUNSEL, NATIONWIDE MUTUAL INSURANCE CO.

> “I find it highly unlikely that IT professionals, company officials or lawyers would be able to examine the intent of a criminal that has yet to be identified.
>
> CHRISTOPHER PIERSON, ATTORNEY, LEWIS AND ROCCA LLP

But while there's value in informing consumers of security breaches that pose a real risk of identity theft or fraud, little is gained by overnotification, added Nahra, who is also a partner at Wiley, Rein & Fielding LLP in Washington.

For instance, the random loss or theft of a laptop or tape containing confidential data poses less of a risk than a targeted attack against a system containing terabytes of customer data, Herath said. Applying the same disclosure standards in both cases may not be appropriate, he said.

Paul Rubin, a former director at the Federal Trade Commission and a professor of economics and law at Emory University, argued for a more precise notification standard, because only about 2% of breach victims become victims of fraud and identity theft. Indiscriminate disclosures will only worry consumers, who may place fraud alerts on their accounts or close them, with little real reason, he said.

Allowing breached companies to make judgments on whether data might be misused will never work in favor of consumers, "because the statute of limitations on thieves using stolen data does not expire," said Arshad Noor, CEO of StrongAuth Inc., a compliance management firm in Sunnyvale, Calif. ▸

---

*Todd R. Weiss contributed to this story.*

# Former FTC Member Says Data Protection Is Inadequate

BY JAIKUMAN VIJAYAN

*As a federal trade commissioner between 1997 and 2005,* **Orson Swindle** *was involved in the launch of the Federal Trade Commission's National Do Not Call Registry and participated in policy deliberations about information security and privacy.*

*Now senior policy adviser and chairman at the Center for Information Policy Leadership — a privacy think tank whose members include The Proctor & Gamble Co., Eli Lily & Co. and Microsoft Corp. — Swindle talked with* Computerworld *last week about some of the privacy challenges facing corporate America.*

**What's driving the privacy agenda today?** In the past year, we've heard about some hundred-plus disclosed security breaches, about hacking, lost laptops, lost files, disclosures of account numbers and even computers falling off the back of delivery trucks. This inadequate protection of sensitive data is just unacceptable. We have got to collectively do a much better job at it. There's no security initiative, there's no new law, there's no new technology that's going to solve this problem altogether.

**What does this mean for businesses?** The biggest concern for business is just being aware that if you handle information, you've got an obligation to protect it. The Federal Trade Commission with a couple of decisions last year plainly stated that. Both were brought against companies not for a promise not kept but for simply being in the business of collecting and using information that is sensitive and not taking sufficient precautions to protect that information.

**What sort of precedent does ChoicePoint's $15 million FTC fine set?** That case is quite a bit different. In the ChoicePoint case, there were lots of things that were violated — in particular, the Fair Credit Reporting Act. That carries monetary penalties that can be substantial and, in this case, obviously were. If nothing else, it certainly should be getting people's attention. Talk about a two-by-four between the eyes.

**What is the overall effect of these breaches?** We know that millions of people have had their information exposed, bank accounts depleted, and have had to go through the trauma of getting their credit ratings squared away.

Then there's the firm that failed to provide adequate security through negligence or inadequate measures. Ask ChoicePoint how much it cost them not having it done adequately. It's causing consumers to lose confidence in using information technology. That may be the biggest loss of all.

**How is this steering the privacy debate in Congress?** There's the emotional hue and cry affecting members of Congress and state legislatures to "do something." Unfortunately, we will see some onerous legislation that might allow some political figure to declare victory and walk away. But legislation alone is not going to solve this problem.

**What do companies need to do differently?** We think of information and protecting it as protecting our stuff — our corporate secrets, the Coca-Cola formula and things like that. But today, information security is about protecting all that other stuff. It's the information we use. All those things are points of vulnerability that the company that owns the information is responsible for. ▸

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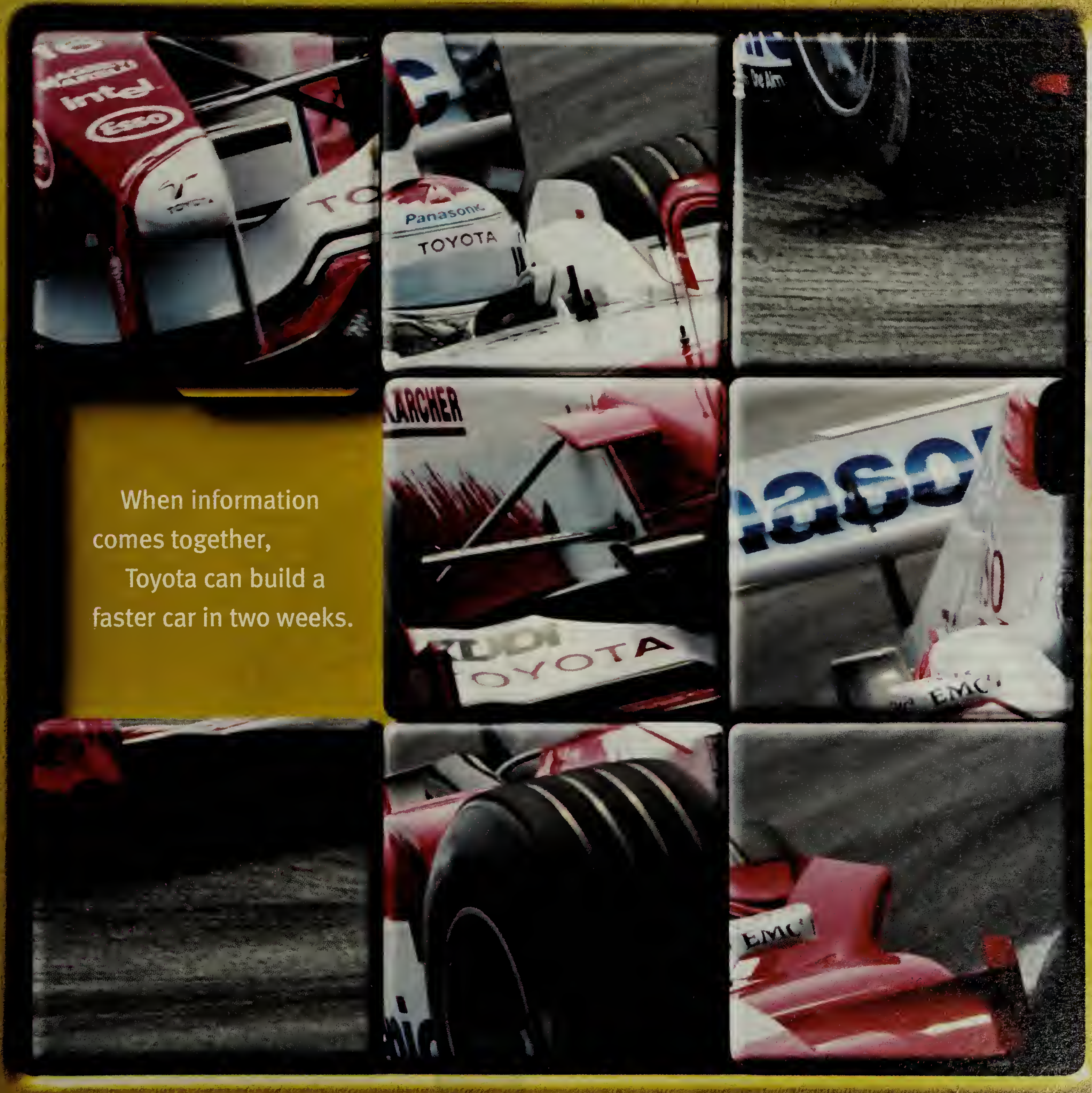

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## BRIEFS

### Gateway Agrees to Settle HP Patent Suit

Gateway Inc. has agreed to pay Hewlett-Packard Co. $47 million to end a bitter two-year patent dispute between the two PC makers. As part of the settlement, the companies said they would sign a seven-year cross-licensing agreement. The settlement ends a battle that included three federal court lawsuits, three International Trade Commission investigations and one state court lawsuit.

### Oracle Unveils Search Engine

Oracle Corp. unveiled a standalone enterprise search offering at Oracle OpenWorld Tokyo 2006 last week. Oracle Secure Enterprise Search 10g targets corporations seeking to ensure that only authorized staffers can access sensitive business information. The engine can be used to search Oracle databases, applications, file servers, repositories, Web portals and internal and external Web sites.

### Cisco Closes Buy of Scientific-Atlanta

Cisco Systems Inc. last week completed its $7 billion acquisition of Scientific-Atlanta Inc. Cisco said the addition of the Lawrenceville, Ga.-based firm's offerings bolsters its goal of providing a complete data, voice, video and mobility infrastructure lineup. Scientific-Atlanta and its CEO, Jim McDonald, will become part of Cisco's Routing and Service Provider Technology Group.

### HP Adds Peregrine App to OpenView

Hewlett-Packard has completed a project to integrate software it gained from its December acquisition of Peregrine Systems Inc. into its own line of asset management software. Peregrine's AssetCenter has been combined with HP's OpenView Service Desk software and will monitor various systems running on a network, including software, PCs and mainframes, HP said.

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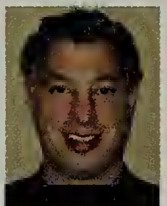
# [ ON THE MARK

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY BUZZ BY MARK HALL ]

MATTHEW FAULKNER

## Do Like Letterman When CRM . . .

**. . . deployment is on your agenda.** That is, make a top 10 list of required features and stop there. "People try to do too much with CRM," observes John Carini, CEO of iEnterprises Inc. in Murray Hill, N.J. "Do the top 10 things people do every day, and stop. If all CRM applications were rolled out in that fashion, you'd bring more value and have more success." Of course, he says, once you get those 10 things right, you can do more. But, he contends, the value of each subsequent item on the list diminishes in comparison with the effort it requires. Carini's company has been creating CRM tools for Notes users since 1995 and wireless CRM apps for the past five years, and he concludes that the best implementations — whether wireless or wired — have been highly focused on achieving specific goals. The CRM on the Go technology offered by iEnterprises lets you deploy in-house software as well as Salesforce.com, Siebel and most other commercial CRM applications on BlackBerry handhelds, and it can be bought as either a service or as packaged software. Expect to see CRM on the Go on Windows Mobile devices in Q3 and on Symbian-based handhelds by year's end. Write up your top 10 list of got-to-have mobile features and then stop scribbling. Annual subscription pricing starts at $200 per user.



CARINI: Stop at 10 CRM features. No joke.

### Once they're mobile, it's nice to . . .

**. . . know that you can kill them.** Not end users, of course. Just their devices. You can do that and more with an update to Credant Mobile Guardian Enterprise Edition, a mobile security tool sold by Credant Technologies Inc. in Addison, Texas. Richard Stone, Credant's vice president of marketing, said Version 5.1 lets you secure all manner of mobile devices — even to the point of sending over-the-air "kill" signals that render them useless. Stone says Credant's intelligent software agents can run on everything from BlackBerries to laptop PCs and enforce security policies that you set from a single management console. You can encrypt specific files or all the data on a device. You can even password-protect files on USB fobs or iPods, he says. The update also offers support for two-factor authentication. The revision is available this week and starts at $42 per user.

STONE says Credant gives you a license to kill.

**-5%** Market cap change to public companies after security breaches, says University of Maryland.

### Carrier-grade and real-time security . . .

**. . . are being brought to the corporate enterprise.** So promises Arun Chandra, CEO of iPolicy Networks Inc. in Fremont, Calif. He says iPolicy's line of appliances evaluates every single packet on your network in real time and applies firewall, intrusion detection and prevention, virus protection and other security measures controlled from a console called the iPolicy Security Manager. With an ISM Version 2.5 update that becomes available today, you can virtualize sales, engineering and other business domains across physical locations and manage them as a single entity. The software lets you define security policies on more than 500 of iPolicy's appliances worldwide. You can run it stand-alone or on the company's new ISM Express 1000 management appliance, which costs $20,000.

The ISM Express 1000 helps manage global security policies.

### Everyone knows that the trouble with . . .

**. . . software development is achieving business goals.** Where people's opinions diverge is on how to ensure that you achieve your goals. Take, for example, Colin Armitage, CEO of Original Software Ltd. in Basingstoke, England. Armitage says that you should push the testing of business apps into the hands of end users, and he claims that his company's TestDrive-Gold product is intuitive enough for business types to build tests without having to write scripts. In fact, even if they wanted to write scripts, they couldn't with TestDrive-Gold, because there's no scripting language built into the product, Armitage says. It's all done with a visual user interface. The software lets users see how an app functions and then report back to developers about what they like and what they don't. Currently, the product works only with applications on IBM's iSeries systems. But Armitage says that he expects to deliver a version this year for any apps built on Oracle databases, regardless of the operating environment. An average sale, he says, starts at about $100,000.

Adam Warshaw, president of DataVelocity Inc. in West Paterson, N.J., contends that you still need to give software developers tools to judge for themselves how their handiwork is doing in the field. Warshaw says the products that are included in DataVelocity's Erudition suite let developers "score their project against what the business wants." For example, they can evaluate proposed changes to an application and see how those changes would affect dependencies within the program's code and with external applications — something business users hardly concern themselves with. Erudition will be available in two weeks via a managed service starting at $50 per user monthly. ▸

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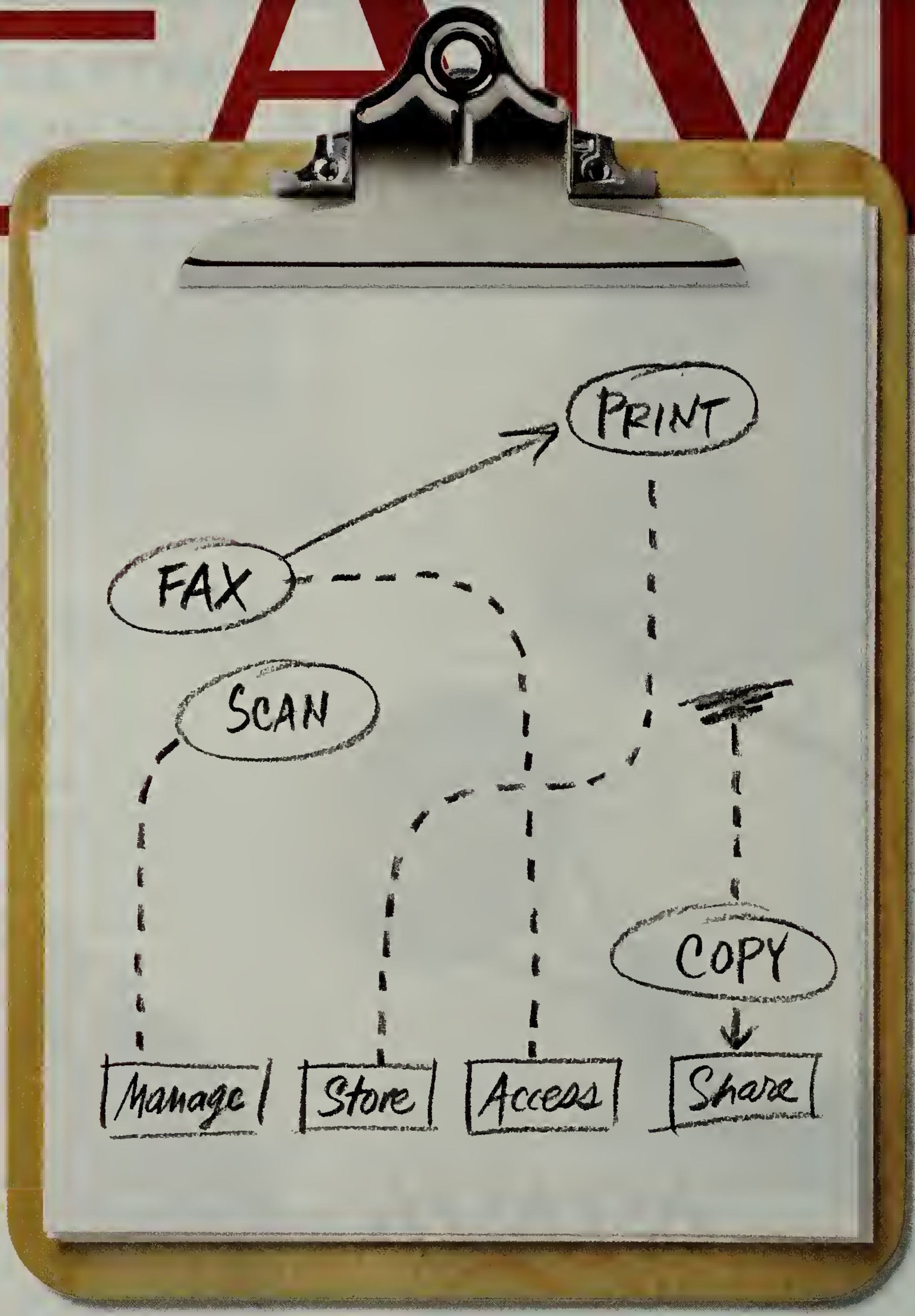
# TEAM



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# BRIEFS

## Dassault Agrees to Purchase MatrixOne

French firm Dassault Systèmes SA has agreed to buy product life-cycle management software developer MatrixOne Inc. for $408 million in cash. The companies have not decided whether to create a single brand for their three product lines – Enovia, SmarTeam and Matrix10 – or to retain the existing brands. Product plans will be disclosed after the close of the deal, which is expected in June.

## Federal IT Worker Pleads Guilty to Hack

A former IT systems auditor at the U.S. Department of Education faces a five-year prison sentence on a computer hacking charge for secretly monitoring his supervisor's e-mail and computer use. Kenneth Kwak pleaded guilty to unauthorized access to a protected computer in furtherance of a criminal or tortious act, the U.S. Department of Justice said. Kwak was a systems auditor in the agency's Office of the Inspector General.

## BEA Buys BPM App Maker for $87.5M

BEA Systems Inc. last week said it has acquired Fuego Inc., a developer of business process management software, for $87.5 million. The Fuego portfolio of products will be folded into BEA's AquaLogic line and will be the foundation of BEA's AquaLogic Business Service Interaction product family.

## PMC-Sierra Buys Agilent Storage Unit

PMC-Sierra Inc. last week completed its $425 million acquisition of the storage semiconductor business of Agilent Technologies Inc. The division makes components for Fibre Channel storage systems, including its Tachyon brand of Fibre Channel controllers. The acquired unit employs about 240 people and operates design centers in Santa Clara and Roseville, Calif., and Singapore.

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## KATRINA: SIX MONTHS LATER

*Continued from page 1*

# Katrina

worries about this year's hurricane season, even while many employers continue to struggle to find IT staffers to replace workers who left the region and haven't returned.

"I have a great concern for this coming hurricane season," said James Mehaffey, manager of the business continuity program at Blue Cross and Blue Shield of Louisiana. "In the Gulf Coast, our infrastructure is severely weakened."

Many of the people leading the efforts to reinforce IT systems and networks have already been through a lot, both professionally and personally.

For instance, the home of David Scripter, regional IT manager of URS Corp.'s New Orleans operations, was located near a breached canal in the city. "I lost my house and pretty much everything I own," Scripter said, although he added that at least he, his wife and their three young children were all safe and sound.

From a business standpoint, the engineering services firm's offices were inaccessible for about a month after Katrina struck on Aug. 29 and caused devastating flooding the following day. Because its systems were out of reach, URS had to buy new hardware, especially PCs for its end users, Scripter said. The company set up remote offices in Baton Rouge, La., as well as Houston and Austin, and it took URS two weeks after the storm to restore its IT operations.

> Without the communications leg of it, no matter which data center we worked out of, we were going to be dead in the water.
>
> **LARRY MAYO,** VICE PRESIDENT OF INFORMATION TECHNOLOGIES, KEESLER FEDERAL CREDIT UNION

Now Scripter is back in New Orleans, working to make certain that the company could recover from another catastrophic storm within five days. He said his staff has installed a storage-area network in New Orleans and is investigating how to mirror the data on the SAN to an off-site location in another state. URS is also installing a system that will replicate separate Oracle databases used in 3-D engineering applications to remote locations. "We're trying to get a lot of this stuff in place by June 1," Scripter said.

### Familiar Ground

Larry Mayo, vice president of information technologies at Keesler Federal Credit Union in Biloxi, Miss., is working under the same deadline.

Keesler's headquarters building lost its roof and most of its windows to Katrina, but the credit union's data center was spared because it was located between two cement floors in the middle of the building, Mayo said. A generator worked throughout the seven days that the company was without electricity, and Mayo took steps to activate Keesler's disaster recovery hot site in Scottsdale, Ariz.

But the credit union decided not to go live with the hot site because of the widespread failure of voice and data networks in the Gulf Coast region. "Without the communications leg of it, no matter which data center we worked out of, we were going to be dead in the water," Mayo said.

As a result, Keesler is installing satellite communications links as network backups at its 12 locations in the U.S. and three offices in the U.K., he said. The installations have been completed at three facilities, and the remainder are due to be finished by June 1.

By that date, the credit union also expects to have finished deploying a converged voice and data network that will replace an aging Cisco data backbone and a private branch exchange phone system. The converged network, which was expedited after Katrina, will be able to work over the satellite links, Mayo said.

The day after Katrina struck, Neal Hennegan, director of technology at insurer Gilsbar Inc., had to drive 60 miles

*Continued on page 16*

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## New Orleans IT Vet: Workers Come First

**IT EMPLOYEES** throughout the University of California's 10 campuses and administrative offices know firsthand what earthquakes can do.

But the university system's IT leaders, whose units support some 121,000 faculty members and employees, still felt they could learn something more about natural disasters from New Orleans' experience last summer.

So at the end of January, John Lawson, formerly CIO at Tulane University in New Orleans, was invited to speak before the system's IT leadership council, which includes CIOs from each of the schools, about his experience dealing with Hurricane Katrina.

"I thought it was just riveting, compelling, and if we don't listen to this man, we're idiots," said Paul Weiss, who heads technology support services for the 2,000 employees of the university system's office of the president in Oakland, Calif. "He's lived reality."

Lawson's most important point, according to Weiss, was that IT operations must first restore contact with employees after a disaster hits.

The University of California system, with its statewide high-speed networks, can easily build alternative systems and create Web sites that can be used as points of contact, Weiss said. Most employees will be able to find some means to access e-mail, he said.

Nonetheless, Weiss said Lawson's remarks prompted a review of the employee communications plan to make sure it's up to speed.

Several IT managers interviewed last week about the state of IT operations in New Orleans agreed that the first action in a disaster should be to check in with employees, because nothing happens without them.

Lawson said in an interview that Tulane quickly created an employee registration process after Katrina hit because "we cared about our employees – we wanted to know where they were, and were they safe."

Rick Omartian, IT chief financial officer and chief of staff at The Guardian Life Insurance Company of America in New York, said that the most important asset of any organization is its workers, whose safety should be management's top priority.

"The business will quickly collapse without its people, even if the company deploys the most advanced technology, alternative workspace plans and disaster recovery data centers," Omartian said.

The law firm of Adams and Reese LLP, which had offices and a data center in New Orleans, created a disaster-relief fund of $200,000 to assist affected employees, said CIO David Erwin.

"There was even a team of people assisting employees with locating housing, schools, churches, banks and whatever was needed," he said.

– PATRICK THIBODEAU

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## KATRINA: SIX MONTHS LATER

*Continued from page 14*

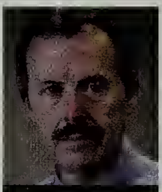
# Katrina

from his office in Covington, La., to find a working phone so he could declare a disaster and authorize hot-site operator SunGard Data Systems Inc. to switch his IT operations to a Chicago data center.

Like many IT managers who experienced the storm and its aftermath, Hennegan can quickly list the things he did right and the things he has since addressed. For instance, he was especially pleased that Gilsbar had tested its SunGard backup capabilities before Katrina struck, because that helped avoid start-up delays at the hot site. But Hennegan said he plans to send IT employees to Chicago in advance of any future storms "and empower them to declare a disaster without talking to us."

Even at a company like Blue Cross and Blue Shield of Louisiana, which had invested heavily in business continuity capabilities, Katrina managed to expose issues. For instance, the health insurer used diverse routing techniques on its networks but wasn't aware that at one point they all went to a common physical site in New Orleans, Mehaffey said.

At the University of New Orleans, IT workers couldn't begin returning to the school's campus until mid-November, said Jim Burgard, assistant vice chancellor for university computing and communications. And it wasn't until the start of January that all of those who remained on the IT staff were back working on campus, he said.



**BURGARD** must replace eight of 45 IT workers.

Even now, the university is still running its mission-critical applications at Louisiana State University in Baton Rouge on 25 servers — some taken from its own data center, and some donated by LSU. But the New Orleans school is installing an uninterruptible power supply and a new generator powered by natural gas at its own facilities, Burgard said. When that work is completed in about six to eight weeks, the applications at LSU will be shifted back to the campus in New Orleans.

But, Burgard added, the university plans to leave the servers in place in Baton Rouge and mirror data to them so that the LSU location can function as a hot site if another disaster occurs. That strategy is also geared toward eliminating some of the problems the university had retrieving its backup tapes after Katrina, he said. Although the school didn't lose any data, it had to wait three weeks to access the tapes, which were stored on the sixth floor of a building in downtown New Orleans

Meanwhile, Burgard is still trying to replace eight IT workers — nearly one-fifth of his 45-person staff. A recent advertisement for a senior networking position that before the storm would likely have garnered about 20 résumés netted just four, he said. In addition, he received only two résumés for a senior database administrator slot.

Also working to fill IT positions is Ochsner Clinic Foundation, which operates a 600-bed hospital on its main campus in New Orleans and 35 clinics throughout Louisiana. Ochsner lost 23 workers from its 150-member IT staff after the storm, said Bill Saussaye, director of information services operations. The health care provider has managed to fill some application development jobs with local people but is using contractors to temporarily fill positions in networking and communications, he said.

Ochsner is aiming to complete several disaster recovery projects before June. One involves the installation of redundant Freon and chilled-water cooling systems in the company's primary data center — a plan prompted by its inability at times to generate enough power to chill the water in the existing system after Katrina hit. Saussaye said he is also looking to set up a remote data center at least 100 miles from New Orleans and hot sites for Ochsner's distributed systems.

Jan Rideout, CIO at Northrop Grumman Corp.'s Ship Systems unit, lost her Mississippi home to Katrina's fury. She said that if there's a bright side to the storm for her, it's that the disaster prompted the Ship Systems operation — which has facilities in New Orleans — to accelerate a plan to replace networking cables with wireless technology.

Disaster recovery plans have to be flexible and must take an organization's ability to respond into account, Rideout said. For instance, many plans assume that employees will be available after a disaster occurs. But when the air conditioners in Northrop Grumman's data center stopped working after Katrina, Rideout said, there weren't any employees on hand who knew how to gracefully shut down the servers.

That points to the challenges that Rideout and other Gulf Coast IT managers are facing as they scramble to shore up their systems, networks and data-protection mechanisms so their companies can withstand another major storm.

"There is not ever going to be the perfect disaster-recovery plan," Rideout said. "You can't write the perfect script, and the next time will be different. And I don't think we can forecast and predict every combination." ▸

## Temporary Locations Are Still Home to Some IT Ops

**THE PHYSICAL DISLOCATIONS** that were caused by Hurricane Katrina are forcing IT managers such as Jim Burgard to address problems as basic as how to get their staffers from one place to another.

Burgard, assistant vice chancellor for university computing and communications at the University of New Orleans, struggled after the storm to find a way to get IT workers to Baton Rouge, where the school set up a makeshift data center at Louisiana State University that it is still using.

Finding places for them to live there was also a challenge, he said. Several employees who owned RVs used them as their temporary residences in Baton Rouge. Burgard himself commuted four hours a day round-trip between his temporary home in Crowley, La., and Baton Rouge. Now he's grappling with the transportation and housing issues as part of developing a new disaster recovery plan for the university.

Hancock Bank has been running its IT operations from a building in Gulfport, Miss., that housed its training staff before the hurricane, said Rodney Sandoz, senior technology officer at the bank.

The bank's headquarters building, which includes its data center, was rendered uninhabitable by the hurricane. Until Nov. 11, Hancock used hot sites in Chicago and Atlanta to keep its systems running. None of the bank's hardware was damaged in the storm, and it recovered all of its data, but Sandoz said officials are trying to better prepare for future emergencies.

"We are in the process of reviewing what we did and making plans to have a smoother transition," Sandoz said. He added that the strategy will include replicating critical files and information to lessen the downtime associated with data backup-and-restore operations.

In addition, the bank is eyeing satellite communications to augment its voice-over-IP network as part of an effort to avoid losing telecommunications capabilities if carrier networks are damaged. Sandoz said that as recently as late November, some of Hancock's 110 branches were still experiencing telecommunications problems. "When those circuits went down, we couldn't communicate except by radio phone," he said.

– HEATHER HAVENSTEIN

## Disaster Sharpens Views of IT's Value

**ONE POSITIVE LEGACY** of Hurricane Katrina, IT managers said last week, is many business executives' increased appreciation of the value of technology. That might make it easier to take IT in new directions, they added.

That has been the case for Nancy Kuo, IT director at M.S. Rau Antiques LLC, a large retailer in the French Quarter of New Orleans. Kuo said business continuity issues have moved to the forefront at M.S. Rau in Katrina's wake. For instance, the retailer recently decided to move its Web servers to a hosting facility operated by Rackspace Ltd. in Austin.

Kuo said that before the storm, businesses such as hers typically viewed IT as a secondary concern. Often, the technology focus was simply on whether computers were working properly, she said.

But now IT is seen in an entirely new light, according to Kuo. "It's way beyond that – it's about the survival of the business," she said.

Rizwan Ahmed, CIO at the Louisiana state government's Office of Group Benefits in Baton Rouge, said Katrina was "more of an eye-opener for the folks who were in the business area" than it was for many IT staffs. "They always thought that somehow IT people will get things magically done," Ahmed said.

– PATRICK THIBODEAU

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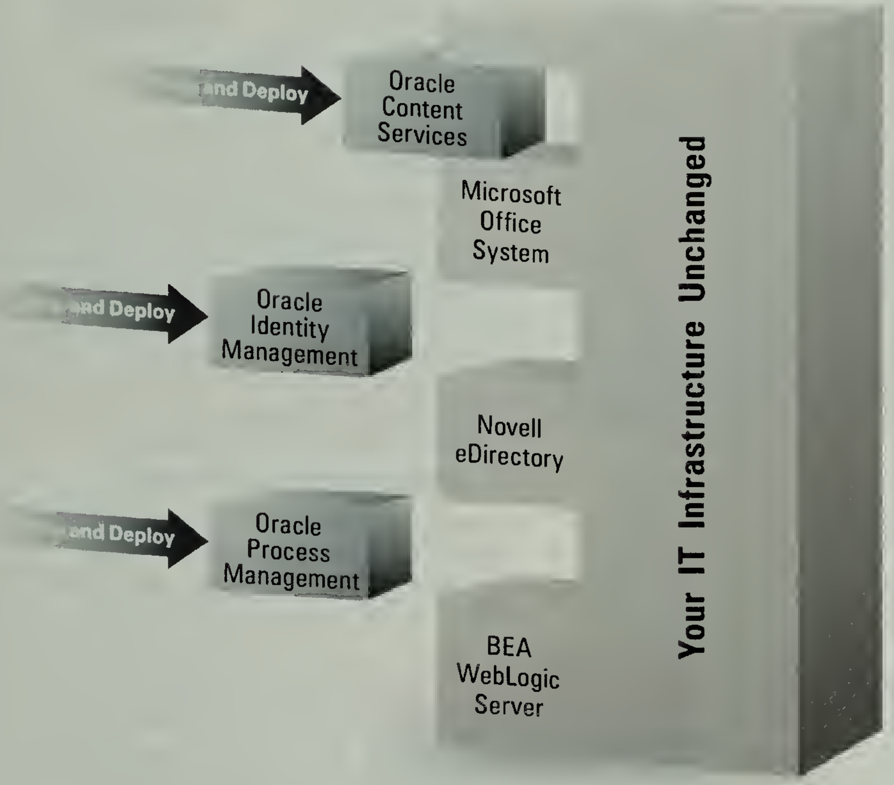

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# GLOBALDISPATCHES An International IT News Digest

## Satyam Expands in China as Costs Rise

**HYDERABAD, INDIA**

SATYAM COMPUTER Services Ltd. last week announced plans to expand its Chinese software development operations in order to offset rising IT labor costs in India.

Virender Aggarwal, director and senior vice president for the Asia-Pacific region, the Middle East, India and Africa at Hyderabad-based Satyam, said the IT services firm will open a development center in Guangzhou, China, to build custom software for customers in southern China. A larger office campus will be set up in an as yet undetermined city to serve companies worldwide, Aggarwal said.

Satyam plans to dramatically increase its Chinese workforce over the next three years, according to Aggarwal. "I can't give a figure of the number of staff we will hire in China, but it will be in multiples of thousands," he said.

The company currently has about 270 employees in China at a software development center in Shanghai and smaller facilities in Beijing and Dalian.

Offshore outsourcing and IT services firms have little choice but to expand in China because of the increasing labor costs in India, Aggarwal said. However, he noted that Satyam isn't likely to expand its Shanghai facility because personnel costs are rising in that city as well.

■ JOHN RIBEIRO, IDG NEWS SERVICE

## MySQL Buys Web Tools Vendor, Adds Two Execs

**UPPSALA, SWEDEN**

OPEN-SOURCE DATABASE developer MySQL AB announced that it has acquired Netfrastructure Inc., a small vendor of tools for building Web-based applications. The price MySQL paid for Manchester, Mass.-based Netfrastructure wasn't disclosed.

Uppsala-based MySQL also said it has hired Netfrastructure founder Jim Starkey as its senior software architect. Earlier in his career, Starkey founded InterBase Software Corp. and developed its namesake relational database. InterBase was one of the first databases to use event alerts and triggers and include support for binary large objects.

Starkey also participated in the development of the former Digital Equipment Corp.'s RDB database.

In addition, MySQL named Taneli Otala its chief technology officer. Otala previously was CTO at SenSage Inc., a San Francisco-based vendor of security analytics tools, and he earlier worked as a development manager at Oracle Corp.

MySQL's acquisition of Netfrastructure follows Oracle's recent purchases of two open-source database vendors, Innobase Oy and Sleepycat Software Inc. Both of those firms offered storage engines that can be used with MySQL.

■ JAMES NICCOLAI, IDG NEWS SERVICE

## Ericsson Sues Samsung Over License Dispute

**STOCKHOLM**

LM ERICSSON Telephone Co. said it has filed lawsuits in four countries against Samsung Electronics Co. after the two vendors failed to reach a new agreement on royalty payments for Samsung's use of mobile technology covered by Ericsson patents.

"Unfortunately, we had to file the lawsuits because we haven't been able to agree to a renewal of our licenses with Samsung, which expired at the end of the year," said Peter Olofsson, a spokesman for Stockholm-based Ericsson.

The lawsuits were filed in Germany, the Netherlands, the U.K. and the U.S. Olofsson declined to disclose the amount of money that Ericsson is seeking from Samsung, which couldn't be reached for comment on the lawsuits.

The two companies signed a license agreement in 2002 allowing Samsung to use patents held by Ericsson on technologies such as the Global System for Mobile Communications and the General Packet Radio Service, according to Olofsson.

■ JOHN BLAU, IDG NEWS SERVICE

**GLOBAL FACT**

**398M**

**The number of mobile phone subscribers in China as of January.**

SOURCE: CHINESE MINISTRY OF INFORMATION INDUSTRY

## India Looks to Attract More High-Tech Firms

**NEW DELHI**

INDIA'S GOVERNMENT plans to offer a set of financial incentives in an effort to lure more high-tech manufacturers to set up operations in the country.

Indian Finance Minister Shri P. Chidambaram told the country's parliament last week that the government plans to assist high-tech manufacturers by investing in firms and offering "viability gap funding." The latter is aimed at offsetting costs incurred by new ventures because of India's infrastructure problems, which include poor roads, port facilities and communications capabilities.

**INDIA will offer funding to offset infrastructure problems, says Chidambaram.**

The incentives will be available for three years, Chidambaram said. Some went into effect last week, while others depend on parliament approval of India's annual budget, which is expected within the next week or so.

Several major chip makers, including Intel Corp. and Texas Instruments Inc., have design facilities in India. But they have been reluctant to set up fabrication plants in the country, partly because of the infrastructure issues.

■ JOHN RIBEIRO, IDG NEWS SERVICE

## State Agency Begins IT Integration Project

**SYDNEY, AUSTRALIA**

IN AN effort to streamline its IT operations, the Department of Education and Training in the Australian state of New South Wales has launched an effort to integrate a mix of mainframes and other systems.

A spokesman for the NSW DET confirmed that the data-integration project is under way but wouldn't provide any details because "the project has only just begun."

A source said the agency began work in January and plans to integrate data from "numerous disparate systems, including older mainframes." The NSW DET is using integration software from IBM and Redwood City, Calif.-based Informatica Corp. as part of the project, the source said.

The project also calls for installing an Oracle 10g database cluster running on Red Hat Linux servers from either IBM or Hewlett-Packard Co., according to the source. ▸

■ RODNEY GEDDA, COMPUTERWORLD TODAY (AUSTRALIA)

*Compiled by Mike Bucken.*

## Briefly Noted

**JBoss Inc.** has purchased Objectone GmbH, a Berlin-based systems integrator, in an effort to establish a stronger footing in one of Europe's fastest-growing markets for open-source software. Objectone is a JBoss partner that sells subscription and support services for the Atlanta-based software vendor's products. The integrator was renamed JBoss Deutschland GmbH, effective last Wednesday.

■ JOHN BLAU, IDG NEWS SERVICE

**Oracle Corp.** said it plans to set up a business unit in the Asia-Pacific region that will focus on embedding the company's software in home appliances and other products. Developers assigned to the unit will work at existing design centers in several countries. Oracle, which already offers three embedded databases, said it plans to develop embedded versions of its 10g Enterprise database and application server software over the next 12 months.

■ SUMNER LEMON, IDG NEWS SERVICE

**Intel Corp.** plans to invest $300 million (U.S.) to build a chip assembly and testing plant in Ho Chi Minh City, Vietnam. Construction will begin immediately on the plant, which will be the first factory of its kind built in Vietnam. It will eventually employ 1,200 mostly Vietnamese workers, Intel said.

■ DAN NYSTEDT, IDG NEWS SERVICE

**Sony Corp.** and **NEC Corp.** have agreed to combine their optical disk drive businesses into a single company. Sony will own 55% of the new company, which will be called Sony NEC Optiarc Inc. and begin operations on April 3.

■ MARTYN WILLIAMS, IDG NEWS SERVICE

**Hon Hai Precision Industry Co.** will spend $110 million to build several IT manufacturing facilities in Tamil Nadu state in southern India, according to Dayanidhi Maran, India's minister for communications and information technology. Taipei, Taiwan-based Hon Hai will manufacture mobile phones and other products in India. The facilities being set up in Tamil Nadu are expected to create more than 10,000 jobs, Maran said.

■ JOHN RIBEIRO AND DAN NYSTEDT, IDG NEWS SERVICE

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# Sun Blames State Department Concerns for Latest Grid Delay

## Says government security fears and restrictions force changes in plan

**BY ROBERT McMILLAN**

SECURITY CONCERNS expressed by the U.S. Department of State have further delayed the rollout of Sun Microsystems Inc.'s computer grid, a Sun executive confirmed late last month.

The company had planned to implement the Sun Grid initiative in early 2005, but the State Department's worries and other issues caused it to delay its unveiling and make changes to the original plan, said Jonathan Schwartz, Sun's president and chief operating officer.

"It turned out to be much harder than we'd originally expected," Schwartz said at a Feb. 24 press event in Menlo Park, Calif.

"Our servers are considered munitions by the federal government," Schwartz said. "So when we wanted to provision servers off of our computers to a global population, the federal government got involved and said, 'We'd like to know all the people who use this.' "

The company had cited a lack of computing resources when it first delayed the implementation early last year.

### Rollout 'Imminent'

A Sun spokesman said last week that the rollout of Sun Grid, which will supply processing and storage capabilities for $1 per hour, is "imminent."

The updated plan requires that customers who buy access to the grid wait 24 hours before using it so that Sun can ensure that they are not in violation of export controls. Sun can't allow access to users in certain countries, according to State Department rules.

The State Department restrictions will also prevent the product from becoming the global grid once envisioned by Sun. Instead, Sun now plans to roll out a U.S.-only version of the product, followed by different offerings for other regions of the world.

Despite its missed deadlines, Sun still has high hopes for the grid offering.

For example, Sun's product could still be useful for companies that want to do high-performance computing tasks but lack the technical expertise, said Gerry Vest, a systems administrator at the Southwest Foundation for Biomedical Research in San Antonio.

"If you don't have staff on hand or infrastructure for doing this, it's a real steep hill to climb just to get your feet in the water," he said.

### Credibility Issues

On the other hand, the year-long wait has hurt Sun's credibility, even though the State Department concerns appear "legitimate," said Jonathan Eunice, principal analyst at research firm Illuminata Inc. in Nashua, N.H.

"Sun Grid is pretty much a laughingstock, because they announced it multiple times and they failed multiple times to deliver it," Eunice said.

Eunice said that customers may be reluctant to adopt the Sun service as they weigh the compliance and security issues raised by this type of grid computing. "It's not so much a calculated security equation as an icky feeling about doing things differently," he said.

Sun CEO Scott McNealy said that this kind of hesitation ultimately scuttled a Sun Grid deployment with a bank he declined to identify. The bank made so many security- and compliance-related demands that Sun eventually walked away from the deal, he said.

It could take an exceptional event to finally move a large number of customers over to products like Sun Grid, McNealy said. "It may take natural disasters or a real fundamental crisis to break their adhesions to their traditional way of doing things."

Officials from the State Department did not respond to calls seeking comment for this story. ▸

> **Our servers are considered munitions by the federal government. So when we wanted to provision servers off of our computers to a global population, the federal government . . . said, 'We'd like to know all the people who use this.'**
>
> **JONATHAN SCHWARTZ,**
> PRESIDENT AND CHIEF OPERATING OFFICER, SUN MICROSYSTEMS

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# Disaster Communications Still Lacking, Panel Says

## Hurdles remain six months after Hurricane Katrina

**BY MATT HAMBLEN**
CAMBRIDGE, MASS.

Six months after Hurricane Katrina hit the Gulf Coast, the country is a bit better prepared for a major disaster — but numerous obstacles remain, a panel of communications experts said late last month.

The complexity of modern communications networks, both wired and wireless, makes responding to a disaster not only technically difficult but politically and culturally troublesome as well, said Andrew Lippman, director of the MIT Media Lab.

The roundtable discussion of emergency preparedness issues, sponsored by Avaya Inc., a Basking Ridge, N.J.-based maker of communications networks, included communications specialists from the public and private sectors.

The panelists agreed that there remain enormous obstacles to building an adequate widespread disaster response program. For example, the task of ensuring radio interoperability among local, state and federal agencies could take years to complete.

Lippman noted that the response to the 1906 San Francisco earthquake was more efficient than the emergency efforts that followed Katrina in New Orleans. At a time when communications technologies were limited, a single entity — the U.S. Army — quickly took control of emergency operations.

"In those days, communications didn't exist, with no phones in homes or pockets. They didn't have TV. And yet command and control worked," Lippman said.

Kevin Prendergast, vice president of northeast operations at American Medical Response (AMR), the nation's largest ambulance service, said his workers often lacked links to disaster recovery officials during the company's efforts to help out after Katrina hit. AMR sent 67 ambulances to New Orleans following the hurricane only to find spotty cellular service and incompatibility between emergency radios.

"It was a tremendous burden on command folks," Prendergast said. "Command capability is impossible without communications capability. Communications is the core of what we need."

Because 85% of the nation's critical infrastructure is controlled by the private sector, businesses need to develop the concept of a "trusted partner" when building communications that can survive disasters, said Tom Lesica, senior vice president of global technology and operations at Avaya. Such a partner would likely carry a seal of approval from a third party to ensure that its equipment could survive a disaster, he said.

None of the panelists, including Massachusetts Lt. Gov. Kerry Healey, a Republican, called on federal or state governments to certify trusted partners or legislate such cooperation.

"I suspect companies want to do this on their own," Healey said. "There has to be a degree of civic-mindedness. It's not just the profitability factor."

Following Katrina, The American Red Cross received help from several call center and communications providers, which supplied network capacity and personnel to keep networks accessible for a variety of tasks, said Lesica.

With that in mind, Avaya may work with other IT vendors at a CIO summit next month to devise a plan under which different vendors would commit in advance to offer call center capacity in an emergency, Lesica said. ▸

**What's Needed**

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- **Increase in spectrum** dedicated to public safety.
- **Advance coordination** by private-sector infrastructure providers.
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# Four Health Care Workers Lose Jobs Over Data Theft

## Providence Home Services sets new security policies after breach

BY TODD R. WEISS

PROVIDENCE HOME Services said that it fired one employee and that three others resigned in connection with the theft of backup computer tapes and disks from a parked car in Portland, Ore.

The tapes and disks contained personal information and medical records on about 365,000 hospice and home health care patients of the division of Seattle-based Providence Health System.

In a statement, the parent firm said the four workers left the company after "a confidential and thorough internal review process of the data storage procedures that led to the theft."

> **We have heard from patients that the process to notify the credit agencies can be difficult, and we appreciate the time they have spent as a result of the theft.**
>
> **RICK CAGEN,** CEO, PROVIDENCE HEALTH SYSTEM'S PORTLAND SERVICE AREA

A Providence Health System spokesman said he couldn't confirm the titles of the workers, but he did note that all four had jobs related to the data-theft incident.

Meanwhile, the health care organization said it has signed an agreement with security vendor Kroll Inc. in New York to provide its ID TheftSmart credit monitoring and restoration services for free to those affected by the theft.

Providence said it will notify affected patients by mail this week about the deal and will provide instructions for signing up for the program.

ID TheftSmart allows individuals to continuously monitor their credit files. The service investigates potential identity theft cases and can help victims restore their identities if a data theft occurs.

In a statement, Rick Cagen, CEO of Providence Health System's Portland Service Area, said the company turned to Kroll because "we have heard from patients that the process to notify the credit agencies can be difficult, and we appreciate the time they have spent as a result of the theft."

The Oregon attorney general's office is investigating the data-theft incident. A spokesman for the office could not be reached for comment.

The incident took place on Dec. 31 after an IT worker at Providence Home Services took backup tapes and disks home in his car as part of the division's backup protocol. The disks and tapes were stolen from the car that night.

Providence Home Services has since discontinued that backup procedure and brought in more traditional means of protecting data.

Some of the data on the tapes was password-protected at the application level, while the rest was stored in proprietary file formats without password protection. After the incident, the company added more security technologies, including encryption.

The information on the disks and tapes included names, addresses, dates of birth, physicians' names, insurance data, diagnoses, prescriptions and some lab results. Social Security numbers were included with the records of about 250,000 of the patients, according to the health system. Some of the records also included patient financial information, it said.

Providence said it has received no verified reports that the stolen data has been used illegally. ▸

# Sonic Updates Actional SOA Manager

## Acquired tool to offer process visibility

BY HEATHER HAVENSTEIN

Sonic Software Corp. last week brought out a new version of its Actional service-oriented architecture (SOA) management tool that it said will provide business users with more visibility into business processes.

The Actional 6.0 software is slated to ship today.

After viewing a demonstration of Actional Version 6.0, Janet Park, director of architecture and systems integration at Starwood Hotels & Resorts Worldwide Inc., said she expects that it can help the hotelier automatically define its customized business processes and generate business metrics around them.

"By using Actional [6.0], we can tie the business service operations aspect with more of IT infrastructure management," she said.

Starwood is now using older versions of Actional's SOAPstation Web services broker and Looking Glass Web services management software in a project to rewrite its reservation system to run within an SOA.

Park said she expects that the new version will also allow Starwood to "obtain the last mile of security" within its SOA.

Dan Foody, chief technology officer at Sonic, said Actional 6.0 can help companies learn more about services interactions within a business context and includes automated runtime governance to enforce services policies.

The new version also adds the ability to secure end-to-end process flows and to create and enforce security at the process level, he said.

Foody said the upgrades can support the growing number of companies where "the business person is now starting to get involved in SOA initiatives." Actional 6.0 can also ensure that processes comply with emerging regulations, he said.

Sonic acquired the Actional technology when its parent company, Progress Software Corp., purchased Actional Corp. earlier this year. ▸

# IBM, Novell to Support Identity Manager Tool

## Vendors take aim at Microsoft's planned InfoCard

BY JEREMY KIRK

IBM and Novell Inc. last week said they plan to support an open-source project aimed at giving users more control over how information, such as passwords and financial details, is shared across Web sites.

The two companies, along with open-source firm Parity Communications Inc. in Chestnut Hill, Mass., will contribute code to the effort, called Project Higgins. The concept was developed by Harvard Law School's Berkman Center for Internet and Society.

The project is managed by the open-source Eclipse Foundation in Ottawa, and the resulting tool will support Linux, Windows and other operating systems, said IBM.

IBM said Project Higgins aims to allow users to set rules for how much personal information can be viewed by businesses such as insurance companies or banks.

The open-source tool will take on Microsoft Corp.'s InfoCard, a proprietary secure identity manager that is slated to ship this fall with the next-generation Windows Vista operating system. InfoCard marks the second Microsoft thrust into identity management. Its earlier tool, called Passport, was not widely used.

### Vendor Unity

Proponents of Project Higgins maintain that creating an identity manager requires a multivendor effort because of the difficulty of creating a tool that can adhere to the myriad regulatory requirements of different governments.

"We don't believe that one single company, vendor or expert can solve this," said Dan Bailey, an IT safety and security architect at IBM.

Graham Titterington, an analyst at Ovum Ltd., a London-based research firm, said even several companies joining forces will have difficulty resolving the vast procedural and business issues involved with creating an identity management system.

"My impression of the tone of it is there is an awful lot of bridges you've got to cross and a whole lot of work to be done," Titterington said.

Supporters of Project Higgins said they hope that corporate Web site developers will realize that a structured identity application attracts users and will therefore make their sites compatible with the project's application programming interfaces.

Bailey said the Higgins code should be released by the end of this year, and IBM will incorporate the code into its Tivoli Access Manager and Tivoli Identity Manager software. ▸

*Kirk is a reporter for the IDG News Service.*

# CTO Says Open-source Ingres Database Is Ready for Business

BY ERIC LAI

*Ingres Corp. was spun out of CA Inc. late last year to develop and sell the durable database technology that was released to the open-source community a year earlier.* **Dave Dargo**, *Ingres' chief technology officer, talked about the status of the new company and its place in the database community last week in an interview with* Computerworld.

**Has the momentum of open-source products slowed due to the dual-licensing model implemented by the major database vendors?** I really don't see that at all. Customers started experimenting with open-source databases because they were successful with Linux and Apache Web server. And they recognized that their license fees weren't driving new product development. They desperately wanted the open-source business model. But the open-source databases are immature. They haven't gone through a 30-year maturation process like Oracle and DB2.

In the long run, you may see some temporary wins [by vendors of proprietary databases distributing free editions] for those users who are making pure price decisions. But I think you're going to see more people driving towards [an] open-source business model, [which makes] it more efficient for new database features to be delivered to the market.

For the leading-edge customers who still need new features, there are ways to get such features much quicker than paying license fees to closed-source vendors. When you want a change in a closed-source product, you have to lobby the vendor like you would lobby Congress.

**Can open-source companies keep up with the much larger development operations of proprietary database vendors?** Some Wall Street companies told us that they have lobbied Oracle for 10 years to add certain new features. So it's not just who has the capacity, but who has the willingness to do it. And while Oracle or IBM may appear to have more developers, the fact is the number of people actually touching the kernel is very small, usually about a dozen or so.

**As a veteran of the database wars, can Ingres generate the buzz that surrounds new open-source databases like MySQL?** I think that's kind of naïve. It's not the way the development organizations or CIOs I've worked with make decisions. Developers make decisions based on what is the best tool for a specific task. Standards bodies within organizations then make their decisions on what is going to be the easiest to deploy, support and maintain.

MySQL's popularity is at its level because it is the easiest tool [with which] to deploy Web-based applications, and it came along at a time when Web applications exploded in popularity. It wasn't the "cool factor," it was because MySQL was easy to use. When you talk to an enterprise DBA, they don't care about the coolness or how fast you can develop a Web app with it; they care about stability, about whether they're going to have to come back in at 2 a.m. to recover a corrupted file.

**Has Ingres gained any new customers since spinning off from CA four months ago?** The deals we have closed — and we have closed many deals — have all been expansions within existing customers. I don't know that we've closed any brand-new customers. We've concentrated on communicating with our existing customers, making sure they're satisfied. We believe that new customers will come as a natural course.

**Has the new Ingres formulated a product development road map?** On Feb. 7, we released Ingres 2006, which has a new licensing, packaging and pricing model. We will also have a product coming out in the first half of 2007. We're doing things that are subtle changes to major features we already have. With our community edition of Ingres, we expect to have a new release each month. Then, when we roll out as a single enterprise-class release in a year, people know it's been through a heavier testing environment. We're also working with partners to create an Ingres-type software appliance that makes it very easy to provide support for both the OS and database. We haven't decided yet whether to open-source the OpenROAD, Enterprise Access and EDBC products.

**What is the status of the company's search for a permanent CEO?** [Interim CEO] Terry [Garnett] is still looking. He wants to make sure he finds the right CEO. As Terry watches the team jell and grow, some of his search criteria may have changed. ◆

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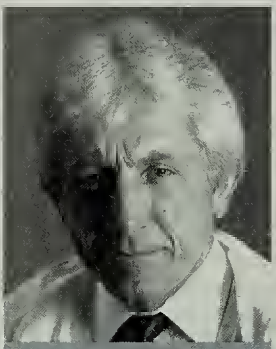
### DON TENNANT

# As the Timid Turn

I HAVE little doubt that when a lot of people read the news on our Web site last week that the Canadian company Corel and the Chinese company Lenovo had inked a deal to ship Corel's WordPerfect office productivity suite on a new line of Lenovo PCs, they could barely contain their disgust.



**DON TENNANT** is editor in chief of *Computerworld*. Contact him at **don_tennant@computerworld.com**.

"How could those Canadians sell out to the Chinese that way? We let them have WordPerfect, and now they're letting the Chinese get their hands on it," they'll mutter. "Don't they realize that government and law offices all over America use WordPerfect? I bet this will even give the Chinese the means to tamper with the source code and ultimately sabotage our legal system."

I'm just waiting for the House Committee on International Relations, ignorant of the fact that Corel is based in Ottawa, to try calling Corel executives on the carpet for compromising our national security.

Oddly enough, when I read that news on our Web site last week, I could barely contain my disgust, either. But not because I was hallucinating about the Red Menace.

For as long as I care to remember, I've listened to software vendors, Corel among them, whine about Microsoft's anticompetitive practices and its monopolistic stranglehold on the marketplace. All they wanted, they wailed, was a level playing field where they could compete.

So what bothered me about the Corel/Lenovo announcement isn't what it said, but what it didn't say. This is what Corel *should* have announced to you:

"As part of its strategic plan to work with Lenovo and other hardware vendors to offer users the choices they deserve, Corel is announcing full support for the OASIS OpenDocument format as a standard for office productivity applications. In doing so, Corel is fulfilling its long-standing commitment to deliver products that will free users from the fetters of proprietary file-saving formats."

Unfortunately, Corel said none of that, and in fact has meekly surrendered to Microsoft by all but abandoning ODF. An especially unpleasant element of that turnabout is that Corel has backtracked on assurances it gave Massachusetts that it would support the state's controversial effort to standardize on ODF — a standard that Corel itself was instrumental in formulating.

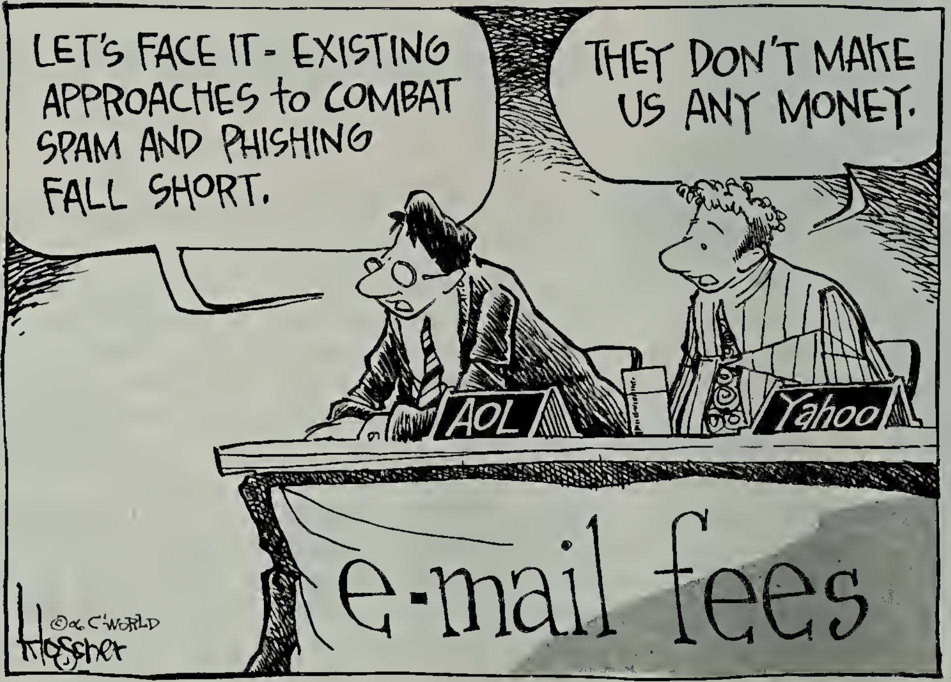
Last fall, in response to former Massachusetts CIO Peter Quinn's request for feedback on the Enterprise Technical Reference Model, which identified ODF as the state's standard for creating and saving official records, Richard Carriere, Corel's general manager for office productivity, was effusive in his support. Here's an excerpt from his response:

"Corel strongly supports the broad adoption of the open standards Massachusetts has outlined, including XML, the OASIS Open Document Format and PDF. . . . Corel is an original member of the OASIS Technical Committee on the Open Document Format, and Paul Langille, a senior Corel developer, is among the original four authors of the ODF specification. Suffice to say, Corel remains committed to working alongside OASIS and other technology vendors to ensure the continued evolution of the ODF standard and the adoption of open standards industrywide."

So one can only imagine Quinn's frustration when in January Corel released WordPerfect Office X3, the latest version of the office productivity suite, without ODF support. And that frustration must surely be shared by Quinn's successor, Louis Gutierrez, as Corel executives tap-dance awkwardly around the question and distance themselves from ODF.

Corel's lack of fortitude to stand alongside IBM and Sun in the quest to popularize ODF as a viable alternative to Microsoft is disgusting. The going got tough, and the timid turned and ran. ▶

Don Tennant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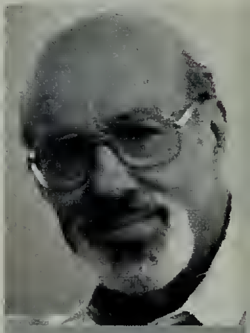
### MARTIN GOETZ

# Patents: Where's the Invention?

HARDLY A week goes by without the controversial issue of software patenting hitting the news. Particularly controversial are the business-method software patent filings that are inundating the U.S. Patent and Trademark Office. Patent attorneys are characterizing obvious and normal business methods of processing information as "machine systems" and describing the logic for automating a manual or semimanual business method as an invention. And the patent office continues to accept such applications.

Meanwhile, the U.S. courts are trying to cope with, as well as clarify, the plethora of software patents that are in litigation. It's a real mess that seems to be getting worse. Although nearly 40 years have passed since I was granted the first software patent, the nature of software is still being debated around the world.

Many organizations are fighting for or against the patenting of all software, while others are solely for or against the patenting of business methods. As more and more business methods are computerized, it is clear to many of us in the computer field that there are no inventions involved. What constitutes an "invention" is key to this discussion.



Besides being a founder and former president of Applied Data Research, **MARTIN GOETZ** received the first U.S. software patent, in 1968.

The patent office and the Supreme Court have never indicated that a computer program is the subject matter that can be patented. Patents can be granted to processes, machines or methods when they rise to the definition of an "invention" in patent law. While the invention may be implemented in a computer program, it is not the program that is patented. Computer programs themselves are protected from unauthorized copying only by copyright law.

An invention, in lay terms, can be a

novel device, material or technique that is new, inventive and useful. It has been well established that machines, including computer hardware, contain patentable subject matter. As for software, it is well recognized that whatever can be designed in hardware circuitry can be developed in a computer program to perform the same functions. The choice is a purely economic one that mainly has to do with cost, speed and flexibility. Patent applications normally show the preferred implementation, and the patent must disclose the invention adequately for one skilled in the art. But the disclosure could be in the form of circuitry for a hardware implementation, a flow chart for a software implementation or a combination of both.

In 1981, the Supreme Court ruled in *Diamond v. Diehr* that processes were patentable, though it left to the patent office to decide whether a process was "novel" and "nonobvious." The court's emphasis was on whether there was an invention, not on how the invention was implemented.

The patent office shortly thereafter came out with its "PTO Guidelines on Computer Inventions," stating in the opening paragraph, "The U.S. Supreme Court decision in *Diamond v. Diehr* significantly affects an examiner's analysis under 35 U.S.C. 101 of patent applications involving mathematical equations, mathematical algorithms and computer programs." Over time, however, the patent office started accepting business-method software that was described as a machine process solely on the basis that there was no prior art for the business method described, and not because there was an invention embedded in that machine process.

Since then, the patent office has issued patents on business-method software, such as Amazon.com's "one click" process, with little regard for whether they met the test for an invention. The surge in such patents arose from a 1998 U.S. appeals court decision agreeing with the patent office that State Street Bank had a valid patent on a method of doing business for pooling the assets of mutual funds. Unfortunately, that case never went before the Supreme Court, which has yet to decide on business-method software patents. The closest it has come was in 1975, in *Dann v. Johnson*, but in that case, it made a narrow decision in rejecting the patent claim, stating that the patent did not meet the test of "unobviousness."

A nonpartisan government commission, similar to the Commission on New Technological Uses of Copyrighted Works in the 1970s, needs to be formed to provide strong recommendations to the patent office. The commission should examine what other countries have done regarding business methods. The European Patent Convention, for example, has ruled that anything that consists of "schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers" is not an invention and therefore not patentable. That would not only be a good starting point; it could also be the basis for a worldwide agreement on limiting patentability to true software-related inventions. ▸

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# READERS' LETTERS

## Do Only White Guys Have Bad Bosses?

**THE ARTICLE** "Bad Boss: How to Survive the Monster Manager" [Jan. 23] was interesting, but it would have had more appeal if you had thought to have more diversity in the group of bad boss victims you highlighted. I'll go out on a limb here and hazard that women and minorities might have different experiences to share on surviving a bad boss.

**Snowdy Dodson**
*Science librarian, CSUN Library, Northridge, Calif.*

## The Key Is Professionalism

**IN HIS** opinion article "Don't Outsource Program Management" [Jan. 16], Bart Perkins outlines important points to consider when undertaking large programs. Each point needs consideration when determining the best way to manage all opportunities. The interesting aspect is that he advocates outsourcing the program management to a third party over the primary outsourcing group when in-house expertise is not available. Whether in-house or outsourced, the dedication and loyalty of your resources are really dependent on the professionalism of the individual. Even boutique firms can fail in objectivity, accuracy and early warning signals. They are just as susceptible to the politics and fear of losing work as in-house or outsourcing organizations. The key to successful program management is to find the best fit for your core competencies, program specifics and company culture.

**Thomas Cutting, PMP**
*Keane Inc., Cypress, Calif.*

## Line Manager Is Vital To Project Success

**ONCE AGAIN,** *Computerworld* has hit upon a significant aspect of project management ["Not So Fast: Rushing Projects Hurts ROI," Jan. 16]. Experience has taught me that the best way to ensure that project benefits are realized is to involve the line manager from the beginning so that ROI and cost-benefit objectives are shared and understood. The line manager should be tasked with "collecting" the benefits, since he knows more about where they exist. Of course, the project manager must also be involved as a partner, but not as a collection agency. A line manager not in agreement with the goals and the benefits that are expected, or one who is kept in the dark about them, can accidently or otherwise derail the project no matter how well the project has been run. Of course, working with the line manager also assures that there will be reward for him as well as the project manager. There is no better incentive.

**Norman H. Carter**
*President and CEO, Development Systems International, Los Angeles,*
*dsicarte@sbcglobal.net*

**THE BEST** and most effective way to track and secure benefits is to input the savings directly into departmental budgets. If a user justifies a system based on a head-count reduction, then the salary for the head count should be removed from the department's budget based on the planned implementation date. The budget can then be monitored and adjusted should the project implementation schedule change. When this practice is adopted, then all stakeholders get seriously involved in developing meaningful ROI projections and project development schedules.

**J. Russell Robinson**
*Consultant, Graybeard Consulting, Los Angeles and Houston,*
*jrrobin@earthlink.net*

## Life in Cube Farms Isn't for Everyone

**BOTH SIDES** of the debate are missing the key point ["Private Office or Cubicle: The Debate Goes On," Jan. 9]. One size does *not* fit all. Some people need more privacy to work effectively, and others need more interaction. Personally, I think that cubes are a "worst of all worlds" compromise because they don't really provide privacy but do reduce interaction. But then I'm one of those who is more effective when it's quiet. I also acknowledge that I need to stick my head out and see what is happening regularly. But not when I have a system down and three guys are having a loud conversation about sports next door!

**Kai Hintze**
*Systems analyst, Salt Lake City,*
*hintze@aros.net*

**I'VE EXPERIENCED** life in a cube farm, in a start-up where we did shoulder-to-shoulder development on makeshift tables, in a high-walled cube (almost an office), in an open space (desks with no partitions), in a shared office and now back to a cube farm. The greatest personal productivity I've ever achieved was working from home, and second most was in my own office. The least productive environment was the open space. I was constantly interrupted (as tech lead, this is normal) because I was instantly accessible.

If you have a large project, putting the dev team in one room is good because dependencies can be resolved far faster. Respect for someone performing a deep task has to be drilled into the team, though, and a nonintrusive method of asking for help needs to be found so someone can choose to jump out of focus rather than being pulled from it. If you are doing ongoing project support or maintenance, private offices are the way to go.

**Christopher Wanko**
*System architect, Kenilworth, N.J.*

**ONE ASPECT** of the question wasn't addressed, but I think it's critical. Most coders I've met tend to be introverts, and introverts are highly likely to be more productive in an office, where they can feel a sense of autonomy. Putting an introvert in an open cubicle could just as easily stifle communication as foster it. For extroverts, shouting a question over a cube wall is no big deal. For introverts, this may be downright unnerving.

**Ian Smith**
*Indianapolis*

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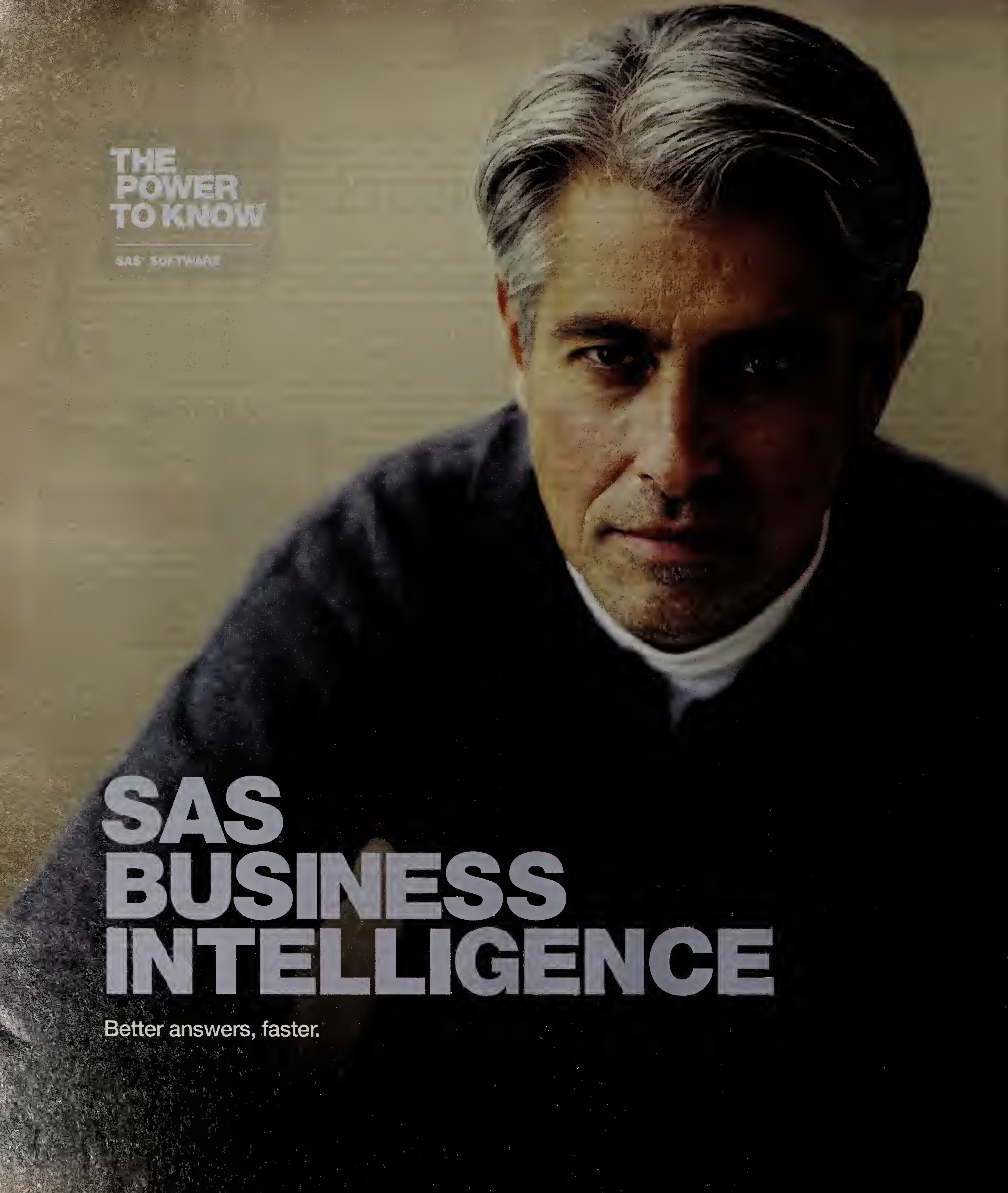

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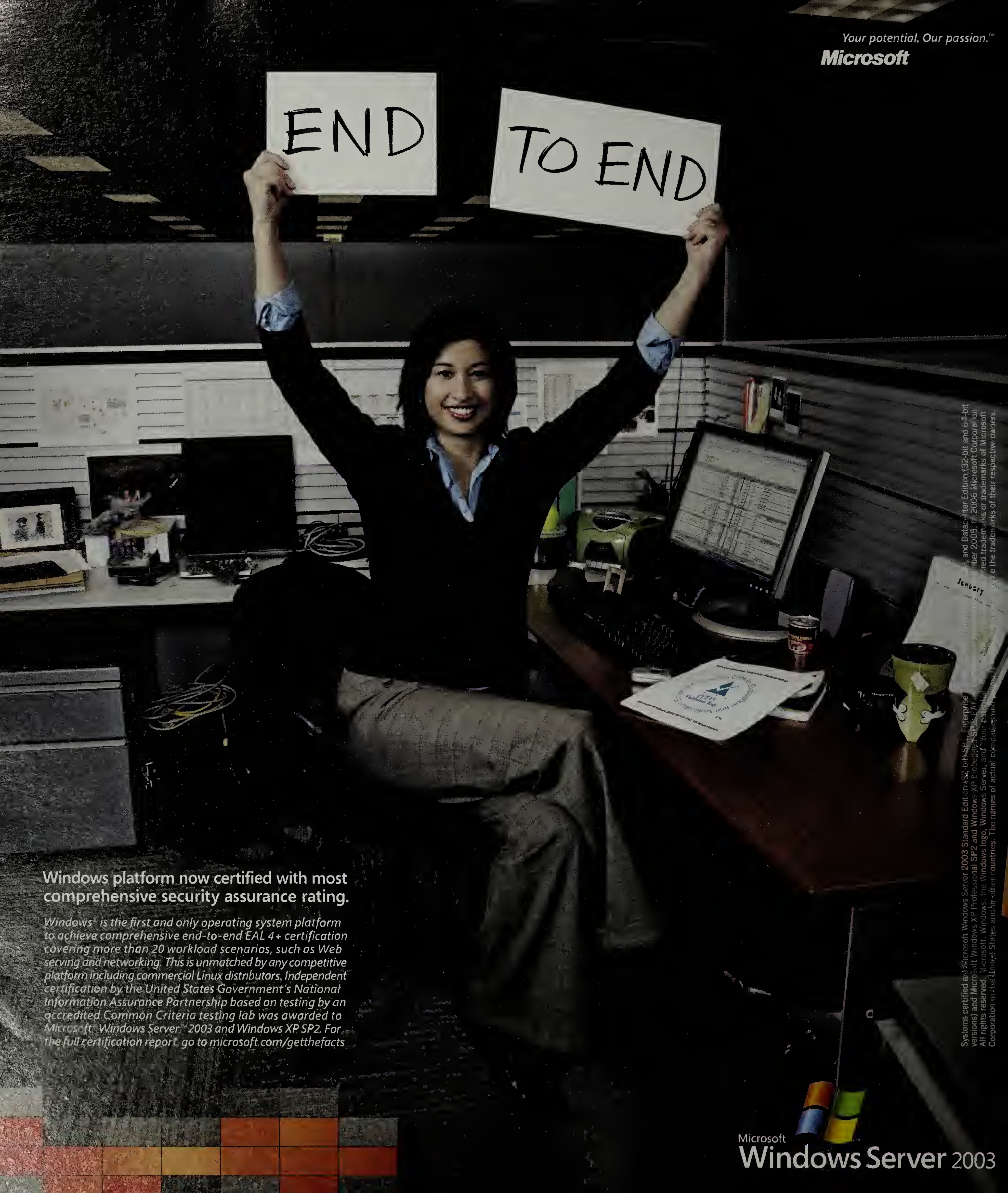

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# TECHNOLOGY

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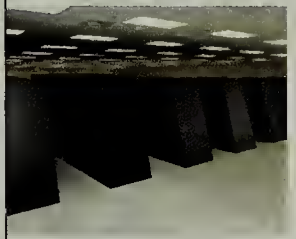
### Border Patrol

An increasing number of companies are using network-based content monitoring tools that analyze traffic for sensitive content and block it from moving outside of the corporate LAN. **PAGE 32**



**FUTURE WATCH**

### Supercomputers Turn Toward Productivity

Supercomputing has become dominated by clusters of hundreds of commodity processors, like IBM's Blue Gene L. But some users are beginning to push back. Needed: faster data flow. **PAGE 36**

**SECURITY MANAGER'S JOURNAL**

### Job Interview Raises Plenty of Questions

C.J. Kelly thinks about changing jobs but finds that the applicant is sometimes better prepared than the company she would join. **PAGE 38**

WENDY WAHMAN

# BETTER GRADE FOR SMART SWITCHES

Intelligent storage switches are maturing, but it may be another year or two before high-level intelligence is available at the heart of the SAN. **BY DREW ROBB**

FOR MANY YEARS, vendors have been promoting intelligent storage switches, particularly for virtualization projects. Initial implementations, however, relied mainly on appliances that created performance bottlenecks and were application-specific and difficult to scale. As a result, end users have been slow to adopt those so-called smarter solutions.

"I don't see any real intelligence yet," says Chris M. Christian, senior design lead SAN architect at Norfolk Southern Corp., a freight railway company in Norfork, Va. "Advanced intelligence features probably won't arrive till at least the summer, and maybe even later."

Though the products may not be ready quite yet, more intelligence has been added, and a lot more is on the immediate horizon. The driver? The frenzy surrounding information life-cycle management (ILM), which requires a rapid ramp-up in intelligence in order to move data around, regardless of the disk array, platform or servers. As a result, products are now coming onto the market that offer additional switch-based services and hold the promise of easing the storage management burden.

"Moving storage functionality into the switch offers the potential for long-overdue management relief when compared to traditional, host-based techniques," says Fred Moore, president of Horison Information Strategies, a storage consultancy in Boulder, Colo. "Many applications are ideal for this, including virtualization, volume management, backup, replication, storage resource management, hierarchical storage management and security."

Compared with traditional data communications switches and routers, storage switches have always had to provide additional functions that could be classified as intelligent.

Device discovery, for example, is essential for storage networking. Servers are initiators of storage transactions, but storage arrays are passive targets. For servers to find and establish connections with storage arrays, the fabric switch provides fabric log-on services and a simple name server. Once storage devices are registered with the fabric, servers may query the switch to discover potential targets. Likewise, fabric zoning and the mapping and masking of logical unit numbers are intelligent functions designed to ensure that only authorized devices are allowed to communicate across the fabric.

The current wave of intelligence, however, generally refers to higher-end switches known as directors. Today's director-class switches contain two types of intelligence: transport intelligence and application intelligence.

Transport intelligence provides enhancements for moving data through

## DIRECTOR-CLASS INTELLIGENCE

Director-class switches contain two types of intelligence:

1 **TRANSPORT INTELLIGENCE helps move data through the storage fabric while optimizing throughput. These functions have been improved in the newest directors, which also include a new brand of transportation smarts, such as the ability to partition resources.**

2 **APPLICATION INTELLIGENCE provides advanced storage services, such as storage virtualization, continuous data protection, and backup and recovery. This technology has not as yet found its way into many products, unlike the technology underlying transport intelligence.**

the storage fabric while optimizing throughput. The functions mentioned above can be classified as transport intelligence. Such features have been strengthened in the newest directors, which also include a new brand of transportation smarts, such as the ability to handle virtualization and the partitioning of resources.

Application intelligence, on the other hand, provides higher-level storage services, such as storage virtualization, continuous data protection, and backup and recovery.

There are only a few examples of application intelligence, but most intelligent-switch vendors are really promoting greater transport intelligence.

For example, Broomfield, Colo.-based McData Corp. offers the Intrepid 10000 Director (i10K). Compared with the previous-generation directors, the i10K comes with advanced transport intelligence intended to speed up traffic.

Norfolk Southern is introducing an i10K into its environment. The current storage-area network (SAN) serves two data centers that represent 500-plus Unix servers (mainly AIX) and more than 600 Windows-based servers. The core of the SAN is built around four McData 6140 directors (two at each site) as well as a series of smaller McData 3232 switches at the edge of the SAN. It is also served by multiple tiers of data. An HDS 9980 array from Hitachi Data Systems Corp. serves Tier 1, an EMC Clariion CX700 from EMC Corp. is at Tier 2, and an EMC Centera is used for disk-based archiving.

Christian has redesigned the SAN with two i10Ks as the backbone. The other storage assets run through the McData director. Like many corporate users, though, the railroad remains cautious about adopting untried intelligence features.

"I'm buying the McData i10K to get I/O from here to here quickly, not for replication, backup or anything else," says Christian. "But it does take a lot of intelligence to move I/O efficiently in a SAN."

## Packing the Trunk

In addition to boosting line speed, the latest brand of transportation intelligence includes trunking and path-selection features. For example, San Jose-based Brocade Communication Systems Inc. has made its Inter-Switch Link (ISL) Trunking software available as an optional add-on to its 4Gbit/sec. SilkWorm directors. ISLs that connect one switch to another can be combined to multiply the throughput — i.e., four 2Gbit/sec. links become an 8Gbit/sec. line.

The San Diego Supercomputer Center (SDSC) at the University of California, San Diego, has deployed a Brocade SilkWorm 48000 director and plans to use this to implement trunking.

"With a 4Gbit/sec. switch, you can trunk together eight ports to get up to 32Gbit/sec.," says Bryan Banister, manager of storage systems and production servers at SDSC. "But we'll need to add extra 48000s to achieve this."

In the meantime, he has found a performance benefit of about 1Gbit/sec. using another intelligent transportation enhancement built into the director. The technology, known as Dynamic Path Selection, automatically routes data to the most efficient path available. This feature can also reduce the number of ISLs needed.

Other switch vendors are releasing similar products. McData switches, for instance, contain trunking technology, and Norfolk Southern has taken advantage of that feature to tie four of its 2Gbit/sec. McData 3232 switches into an 8Gbit/sec. trunk.

Still another largely transportation-based intelligence feature is known by a variety of terms, including virtual SAN (VSAN), dynamic partitioning or SAN routing. The idea is to split one SAN up into multiple discrete sections or tie several SANs into one central switch. This solves problems such as having low utilization on one tape system and overutilization on another.

With a VSAN, one switch — such as a McData i10K — can be partitioned into logical segments, and utilization rates can be optimized. Similarly, one part of the SAN can be earmarked to run at 4Gbit/sec. for backup while the rest runs at 2Gbit/sec. Management is also simplified, and access rights can be set for each partition.

"VSANs allow different fabrics to exist on the same switch, and each is unaware of the existence of other fabrics," says Moore.

Vendors are exporting this technology with switches that extend their traditional Fibre Channel-only range to other protocols, such as Fibre Channel over IP, Internet SCSI and Fiber Connectivity.

Cisco Systems Inc.'s MDS Multilayer Data Center SAN Switch is one example. Others include Hewlett-Packard Co.'s HP StorageWorks Multi-Protocol Router and the Brocade Multiprotocol Router (MPR).

America Online Inc. uses the Brocade MPR primarily for data migration and resource sharing across three SANs — one for each data center in Northern Virginia. Two MPRs are stationed in each SAN, with a total of 2.5 petabytes stored.

Dan Pollack, operations architect at Dulles, Va.-based AOL, explains that when he used to migrate data from one site to another, it involved a lot of physical cabling, reconnecting and reconfiguring to establish dedicated lines for migration. Now he doesn't have to combine the fabrics to transfer data.

"We can provision in less than a day now versus a couple of weeks to physically set everything up before," says Pollack. "The built-in data-migration engines and data-processing engines of the Multiprotocol Router add more intelligence than the typical switch, as they allow us to move data around more effectively."

Pollack offers a virtual tape library (VTL) as an example. Instead of having to deploy one VTL per disk array or SAN, AOL can now share a VTL across arrays at all three sites. This has helped eliminate backup bottlenecks on large servers by moving traffic from Ethernet to Fibre Channel.

## Application Intelligence

Much of the excitement around intelligent switches to date has centered on transportation. That's changing, though, as the demands of ILM force the integration of more application-rich features. The creation of multiple classes of data delivery and multiple zones of virtualized storage, for example, lets users deploy the SAN in alignment with business needs without having to add more hardware or software elements.

Take the case of storage security. Software-based encryption can exact a performance penalty, but deploying encryption appliances across a SAN doesn't always scale well and can be expensive. An intelligent switching platform, on the other hand, can add encryption across a SAN without encountering problems with scaling, and it can keep costs from escalating.

Another example is storage virtualization integration. Early attempts at virtualization largely entailed external appliances. New gear, however, is adding virtualization

## INTELLIGENCE
### Where Should You Put It?

**DEPENDING ON** which vendor you speak to, you'll hear a different opinion on where storage intelligence and virtualization should really be placed. McData and Brocade, being switch vendors, claim that the switch is the most logical place. HDS, with its focus on disk arrays, insists that intelligence must reside in the storage controller. And Cisco, the king of networking, suggests – surprise, surprise – that the network should contain all storage virtualization.

Such a divergence of opinion may well be a factor in the slow corporate adoption of storage intelligence. According to a study of 269 enterprises by Framingham, Mass.-based IDC, only 8% are doing any virtualization at all, while 23% plan to implement some in the next 12 months. If you focus solely on companies with 10,000 or more employees, however, usage rises to 19%, with another 31% saying they plan to add a virtual component within a year.

"It's very hard to compare storage virtualization technologies, as they are mostly theories at this point," says Rick Villars, a storage analyst at IDC. "We will need time to see how well they deploy in the real world."

– DREW ROBB

into the switch itself.

Work on intelligent switching was initially spurred on by a group of start-ups, but most of those vendors have been swallowed up by the big boys. The only one left standing is Maxxan Systems Inc. The San Jose-based company's Maxxan MXV500 can be used either as a SAN switch that supports storage applications or as an application platform that supports storage security, virtualization, snapshots and data replication.

McData, too, is getting in on the act. The company has announced some basic intelligence in its Application Services Modules (ASM), which are port-attached to the i10K and are compatible with previous McData 6000 series directors. The McData ASM is a 24-port, 1U (1.75-in.-high) module that attaches to any port of a McData director or switch. It delivers throughput of up to 1 million I/O operations per second. Current modules support virtualization of continuous data protection, VTLs, replication and data mobility. As at AOL, the idea is to accomplish far more without having to rip out cables and rearchitect the SAN.

## Dreams Do Come True

According to Christian at Norfolk Southern, however, true SAN virtualization remains a dream. But progress is being made: A team of storage vendors is working with McData and others to add a heterogeneous virtualization layer — a major missing piece of the intelligent switching puzzle. Within a few months, ASMs attached to an i10K will be able to take advantage of this virtualization layer to perform a wide array of new services.

"I will no longer need one kind of multipathing software for my HDS box and another kind for my EMC array," says Christian. "I'll only need one brand of multipathing software that will be able to function across several different arrays."

While vendors want to hurry the world onto their new intelligent gear, the bottom line is that the Really Intelligent Switch still lies in the future.

"Intelligence has been just over the horizon for quite some time and has yet to make a big splash," says Mike Karp, an analyst at Enterprise Management Associates in Boulder, Colo. "There will also be a delay in market uptake, since these things are serious investments."

AOL's Pollack doesn't plan to get into virtualization and other application intelligence functions until he has gained more confidence on the transportation side.

Norfolk Southern, on the other hand, doesn't even plan to deploy SAN routing until the end of the year. Says Christian, "That gives us another year for the technology to mature." ◗

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*Robb is a freelance writer in Los Angeles.*

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JAMES KACZMAN

# BORDER PATROL

Network-based monitoring systems detect and block outbound traffic containing sensitive data. **By Robert L. Mitchell**

IT'S NOT what's coming into the corporate network that concerns Gene Fredriksen. It's what's going out. For the chief security officer at securities brokerage Raymond James Financial Inc. in St. Petersburg, Fla., leakage of sensitive customer data or proprietary information is the new priority.

The problem isn't just content within e-mail messages, but the explosion of alternative communication mechanisms that employees are using, including instant messaging, blogs, FTP transfers, Web mail and message boards. It's not enough to simply monitor e-mail, Fredriksen says.

"We have to evolve and change at the same pace as the business," he explains. "Things are coming much faster."

So Fredriksen is rolling out a network-based outbound content monitoring and control system. The software, from San Francisco-based Vontu Inc., sits on the network and monitors traffic in much the same way that a network-based intrusion-detection system would. But rather than focusing on inbound traffic, Vontu monitors the network activity originating from Raymond James' 16,000 users. It examines the contents of each network packet in real time and issues alerts when policy violations are found. Fredriksen could also configure it to block that traffic, but he doesn't plan to use that feature right away.

Unlike security tools that protect specific applications such as e-mail or instant messaging, network-based content monitoring and control tools take a broad-brush approach, examining all traffic that crosses the network. Tools such as e-mail filters address part of the content security puzzle but only recently have begun to focus on outbound content. In contrast, network-based products offer more sophisticated linguistic analysis techniques to identify and block the transmission of protected content.

Network-based systems do more than just rule-based scanning for Social Security numbers and other easily identifiable content. They typically analyze sensitive documents and content types and generate a unique "fingerprint" for each. Administrators then establish policies relating to that content, and the system uses linguistic analysis to identify sensitive data and enforce those policies as information moves across the corporate LAN. The systems can detect both complete documents and "derivative documents," such as an IM exchange in which a user has pasted a document fragment.

Most tools offer preset compliance modules that can detect specific types of sensitive data out of the box. These cover areas ranging from sexual harassment and privacy concerns to compliance with federal regulations. The tools are designed to be used by nontechnical staff, such as the legal, governance or human resources departments. But there is one hitch: They can't identify encrypted content. Organizations need to review business processes where encryption is used and develop policies that permit the movement of encrypted files within specific contexts.

## Broader Trend

These network-based compliance products, which IDC analyst Brian Burke calls multiprotocol content-filtering tools, are part of a broader category of outbound content compliance products that includes e-mail filters, secure e-mail, instant messaging security and enterprise rights management tools. While IDC expects the overall market to grow to $1.9 billion by 2009, the fastest-growing segment will be multiprotocol content filtering, with a compound annual growth rate of 70% over the next four years, Burke says.

That growth is being driven by privacy concerns and the need to comply with regulations such as the Sarbanes-Oxley Act and the Health Insurance Portability and Accountability Act. Enforcement by regulatory agencies is on the rise, says Trent Henry, an analyst at Burton Group in Midvale, Utah.

While network-based content monitoring tools have been around for several years, until recently most vendors

*Continued on page 34*

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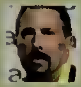
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Registration Open 8:00am - 7:30pm

| | |
|---|---|
| 9:30am – 11:55am | Concurrent Sessions (Primer, Career Development, SNIA Tutorials, etc.) |
| 11:55am – 1:00pm | Luncheon |
| 12:00pm – 5:00pm | Pre-Conference Golf Outing |
| 1:00pm – 5:25pm | IDC Analyst Briefing |
| 1:00pm – 5:25pm | Concurrent Sessions (SNIA Tutorials, End-User Case Studies, etc.) |
| 4:40pm – 6:15pm | End User Town Hall Meeting |
| 5:00pm – 7:00pm | Speed Dating with IDC: A Channel Partner Networking Event at SNW |
| 7:00pm – 9:00pm | Welcome Reception |

## TUESDAY, APRIL 4

Registration Open 7:00am - 7:00pm

| | |
|---|---|
| 7:00am – 8:00am | Breakfast |
| 8:00am – 12:30pm | General Conference Sessions |
| 12:45pm – 2:00pm | Luncheon |
| 2:10pm – 5:40pm | Concurrent Sessions (SNIA Tutorials, End-User Case Studies, etc.) |
| 5:40pm – 8:40pm | Expo with Dinner and Solutions Center |

## WEDNESDAY, APRIL 5

Registration Open 7:00am - 6:30pm

| | |
|---|---|
| 7:15am – 8:15am | Breakfast |
| 8:15am – 12:15pm | General Conference Sessions |
| 12:15pm – 2:00pm | Expo with Luncheon |
| 12:15pm – 7:15pm | Solutions Center Open |
| 2:10pm – 5:40pm | Concurrent Sessions (SNIA Tutorials, End-User Case Studies, etc.) |
| 4:00pm – 7:00pm | Expo and Solutions Center Open |
| 7:00pm – 9:30pm | Gala Evening with Dinner and Entertainment |
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## THURSDAY, APRIL 6

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| | |
|---|---|
| 7:30am – 8:30am | Breakfast |
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- ☐ Non-Tech: Other ____________________
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**What is the one item that best describes your involvement in the IT purchase process?**

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- ☐ Set Budget for Expenditures
- ☐ Evaluate/Recommend Products, Brands
- ☐ Determine Need to Purchase
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**Number of employees in your entire organization (ALL locations)**

- ☐ Over 20,000
- ☐ 10,000 - 19,999
- ☐ 5,000 - 9,999
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- ☐ 500 - 999
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- ☐ 50 - 99
- ☐ Less than 50

**What is your organization's annual IT/IS budget for all IT/IS products?**

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- ☐ None

**What is the estimated annual revenue of your entire organization?**

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Illustration by Dennis Nishi

## Both Sides of Content Filtering Tools

### Pros

- Can detect and block the dissemination of sensitive information embedded in instant messages, Web mail, FTP uploads and other applications as the traffic crosses the network.
- Require little maintenance once set up and configured.
- Linguistic analysis techniques allow products to detect sensitive content, even when only a portion is being sent.
- Can be operated by non-IT staff such as legal or HR employees.

### Cons

- Can be expensive to purchase and install.
- Real-time blocking requires in-line monitoring of network packets that could create a choke point.
- Blocking feature may generate false positives.
- Employee education is required to avoid "Big Brother" perception of monitoring activity.
- Can't identify content embedded within encrypted files.

*Continued from page 32*

offered only monitoring and alerting functions. Now most have added real-time blocking capabilities, a feature that some companies are experimenting with but most aren't yet using. Some vendors, including Tablus Inc. in San Mateo, Calif., have added products that can also monitor "at rest" content on individual workstations.

Fidelity Bancshares Inc. in West Palm Beach, Fla., is using the message-blocking feature in PortAuthority from PortAuthority Technologies Inc. in Palo Alto, Calif. Outbound e-mail messages that contain Social Security numbers, account numbers, loan numbers or other personal financial data are intercepted and returned to the user, along with instructions on how to send the e-mail securely.

Joe Cormier, vice president of network services, says he also uses PortAuthority to catch careless replies. Customers often send in questions and include their account information. "The customer service rep would reply back without modifying the e-mail," he says.

Fear of false positives is one reason why Fredriksen started out using only Vontu's monitoring functionality. Minimizing false positives requires tuning the system, investigating the causes of false positives and developing policies to work around or avoid them. Fredriksen warns that technology alone won't succeed unless the company using them has a strong policy for handling sensitive data, as well as a response plan.

"The challenge with any system like this is they're only as valuable as the mitigation procedures you have on the back end," he says. Another key to success, says Fredriksen, is educating users about monitoring to avoid "Big Brother" implications. "[We are] making sure that the users understand why we implement systems like this and what they're being used for," he says.

Henry says real-time blocking could cause network slowdowns because all traffic must be routed through the appliance before being forwarded to its destination. For now, he says, most organizations that enable blocking avoid performance problems by using it only at the network perimeter, where bandwidth is significantly lower, rather than inside the core network.

Cormier focuses on e-mail — all FTP, Web mail and instant messaging traffic is blocked — so he can turn on blocking without worrying about performance. But he says false positives have been a problem at Fidelity Bancshares because some account numbers match legitimate ZIP codes or phone numbers. Creating an exception would leave those account numbers vulnerable, so users have been trained to send communications with that information as secure messages.

Mark Rizzo, vice president of operations and platform engineering at Perpetual Entertainment Inc. in San Francisco, learned in a previous job the consequences of not protecting intellectual property. "I have been on the side of things disappearing and showing up at competitors," he says. The start-up online game developer deployed Tablus' Content Alarm to remedy the problem. Rizzo uses it to look for suspicious activity, such as large files that are moving outside of the corporate LAN. Now that the basic policies and rules have been set, the system doesn't require much ongoing maintenance, he says. But Rizzo says he doesn't use blocking because he would need to spend significant amounts of time creating more policies in order to avoid false positives.

While companies in highly regulated industries can justify investing in outbound content monitoring and blocking tools, other organizations may have to sharpen their pencils to justify the cost. "These are very expensive solutions to deploy," says Henry.

## Block That Swap

**WHILE MOST ORGANIZATIONS** consider using network-based outbound content monitoring tools to meet regulatory compliance needs, the systems can also help detect and block the dissemination of objectionable or illegal content. At real estate agency Prudential Americana Group in Las Vegas, the problem was illegal file swapping on agents' PCs.

"We were served papers by Columbia, 20th Century Fox and a few others for people stealing movies and using our service to do it," says IT Director Tom Araujo. However, Araujo can't lock down or otherwise manage end users' PCs because his company doesn't own the equipment. "The way we operate, it's 99% independent contractors," he says. So he uses PacketSure from Ames, Iowa-based Palisade Systems Inc. to monitor and block file swapping and other inappropriate traffic on the PCs of his 1,684 users. By tuning PacketSure, Araujo eliminated traffic associated with popular file-sharing programs such as Grokster and Kazaa. Prudential also blocks all credit card and Social Security numbers.

However, Araujo must be careful that overzealous use of compliance tools doesn't impinge on the business. "I haven't got any idea where the next lead or connection is going to come from for someone to get the next piece of business," he says. But stealing on company time is a clear no-no. "I can't control what agents do on their own time, but I do have an issue with them downloading funniest home videos or sharing information that's nonbusinesslike."

– ROBERT L. MITCHELL

Fredriksen, who built a system to support 16,000 users, says that for a setup with about 20,000 users, "you're in the $200,000 range, easily."

Prices range from $6 to $40 per user, depending on the size of the deployment, says Burke. However, companies in less regulated industries are increasingly interested despite the costs. The reason: They're aware that the consequences of intellectual property loss, releases of customer information or inappropriate leakage of financial data can be very damaging.

### Timing It Right

The market is currently dominated by smaller players, but other vendors are entering. For example, CipherTrust Inc. and Proofpoint Systems Inc., which sell e-mail content filtering products, have announced new offerings, says Burke. "Any space that grows by 70% is going to attract the established security players," he says.

So, should you wait to buy? Not necessarily, says Burke. Many organizations don't want to buy different point products to protect each communication channel, he says.

Using application-specific tools isn't necessarily a bad idea, however, especially if your organization already has them, says Henry. The need for multiprotocol content-filtering tools may be at least partly mitigated by existing security mechanisms. Users that have outbound e-mail content filtering, URL blocking and instant messaging controls in place already have some protection, although such tools don't generally do the same level of linguistic analysis.

You should also consider the possibility of conflicts with other security tools. Network-based content-monitoring software can detect encrypted files and interpret them in some contexts, but it can't read the content. That puts it at odds with other outbound content management tools that encrypt documents, such as e-mail security applications and enterprise rights management software, says Henry.

Fredriksen says that although Vontu is important, it's still just one piece of a larger strategy that includes an overlapping set of controls that Raymond James uses to combat insider threats. "This augments the intrusion-detection and firewall systems we have that control and block specific ports," he says. "It's just a piece. It's not the Holy Grail." ▶

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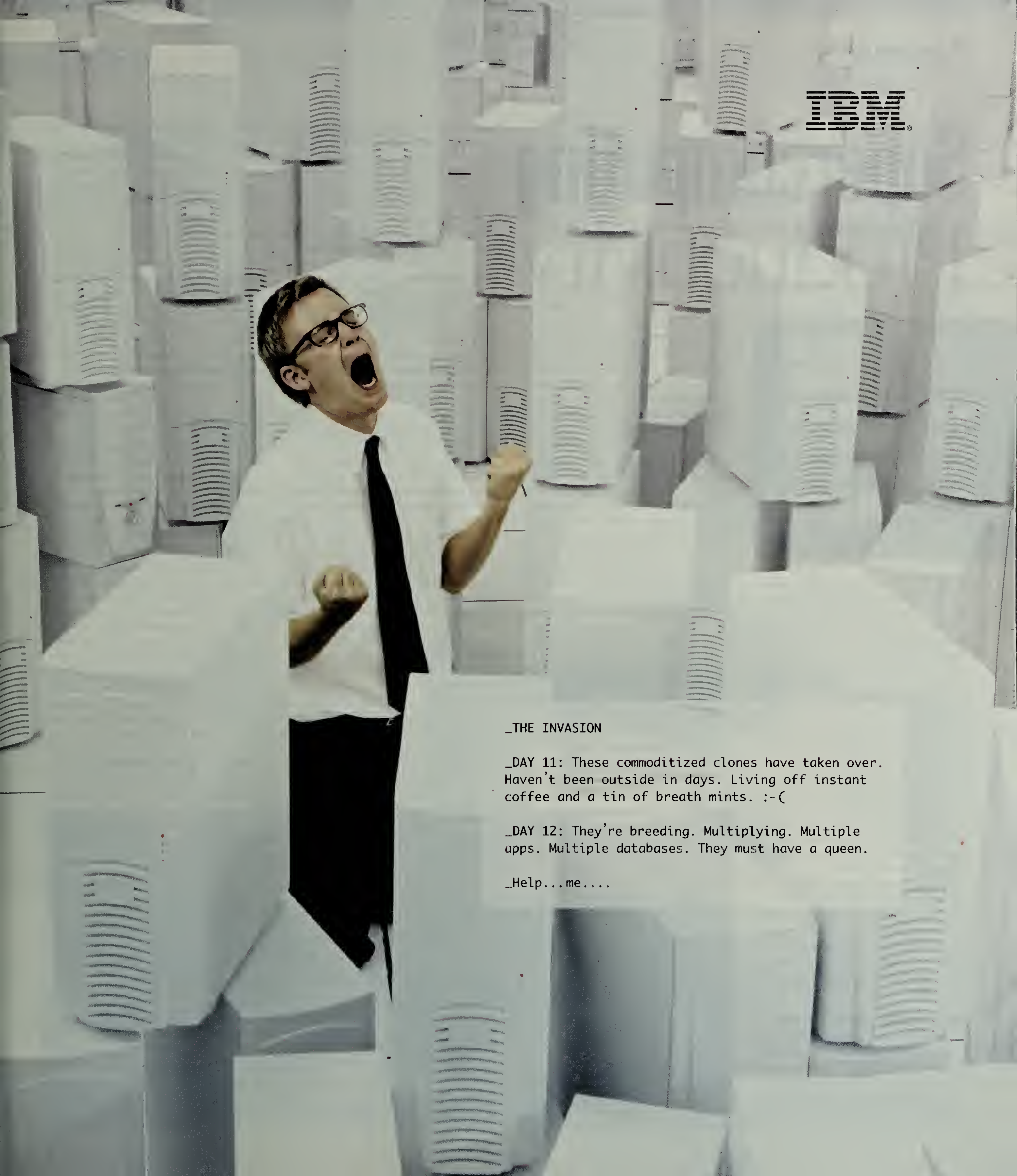

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# Supercomputing Turns Toward Productivity

**FUTURE WATCH** Clusters of commodity processors have come to dominate supercomputing, but some users are beginning to push back. By Steve Ulfelder

TO IT managers, high-stakes supercomputing may seem like the land-speed record: a freak show, amusing but hardly relevant. *Oh, a car broke Mach 1? And a defense lab has a 280 TFLOPS computer? Cool. Now let's get back to work.*

However, supercomputing specialists are wrestling with problems that will affect everyday IT within the next two to five years. Essentially, improvements in processors have outstripped those in data movement. For some time now, the limiting factor in high-performance computing has been the speed with which data can be moved to and from the processors. Indeed, the cylindrical shape of the iconic Cray supercomputers is an effort to limit the distances data must flow.

Because supercomputing is the sharp end of the technology spear, these data-flow problems — still manageable in most corporate data centers — are quickly reaching critical mass in the world's top research facilities. Breakthroughs are needed, and experts acknowledge that answers are elusive.

## Backdrop: Multicore, Clusters

There are two key factors in today's supercomputing tumult: multicore chips and the rise of "cluster" supercomputers composed of hundreds or thousands of humble Intel-style CPUs.

Multicore chips place more than one processor on a single integrated circuit. Dual-core PCs are already common, and experts believe this Moore's Law-driven progression will continue so that by 2010, your garden-variety chip will house 64 processors. With each of these processors running four software threads at once, 256 threads could be simultaneously executed on a single chip.

Jack Dongarra, a computer science professor at the University of Tennessee and the keeper of the list of the world's top 500 supercomputers, says these elite machines typically cluster 500 to 1,000 processors. The current top gun, the IBM Blue Gene at Lawrence Livermore National Laboratory, can process 280 trillion floating-point operations per second (TFLOPS) and clusters a staggering 131,072 processors. Those clusters must rapidly move huge quantities of information from memory to all those processors and back again. The bandwidth needed for this data flow, along with the latency caused by the sheer distances involved, effectively caps the amount of work the computer can do.

Dongarra says that more than 60% of the top 500 computers are clustered rather than relying on the traditional exotic architectures most commonly associated with Seattle-based Cray Inc. "Clusters have completely changed the scientific computing landscape," he says, because they offer a price/performance ratio that exotic machines can't touch.

Moreover, as clusters have become popular, users have found "a surprisingly large number of real-world applications that do not require the extreme latency and bandwidth capabilities of the exotics," says Justin Rattner, a distinguished fellow at Intel Corp.

However, as users call for more powerful tools, Cray executives believe the supercomputing pendulum is swinging back their way — and some research scientists agree. Indeed, they say, it's possible that before 2015, exotic supercomputers, with their benefits of low latency and high bandwidth, will join clusters, with their price advantage, in hybrid architectures suitable for a variety of applications.

According to Jan Silverman, a senior vice president of corporate strategy at Cray, the company is working on compilers that can distinguish code best suited to its vector processors — which can operate on a whole string of numbers at once — from code best run on a more pedestrian scalar processor. These compilers, which Silverman says will be in production by 2009, will be able to schedule vector and scalar work for the hybrid supercomputer. Otherwise, this slow and difficult scheduling work would fall to programmers.

## Plan Ahead

To exploit the parallelism inherent in software as fully as possible, IBM Research, among others, is trying to allow processes to run out of order and then be reassembled on the fly in a process it calls speculative multithreading. Al Gara, chief architect for IBM's Blue Gene, calls it a potential breakthrough, but as the number of threads increases, the components that must eventually be reassembled into the final result grow exponentially. "You need a combination of hardware [and] software to guarantee correctness," he says, "with an assist from the compiler."

The Defense Advanced Research Projects Agency has a program called High Productivity Computing Systems aimed at doubling the productivity of scientific computers every 18 months until at least 2010. In response, several academic researchers are working on languages and compilers for parallel and high-performance computing.

For example, Ken Kennedy, director of the Center for High Performance Software Research at Rice University, is developing a system that uses a library of components to generate high-performance compilers for specific scientific domains, such as biological computing or signal processing.

He's also exploring ways to "parallelize" Matlab, a favorite of scientists and engineers, so that Matlab arrays can be distributed across a parallel machine. Matlab would then be far easier to use than that old standby Fortran, which must be carefully crafted for specific computer architectures, Kennedy says.

"It's important to have big computers," he says, "but there's two parts to that: having a computer and being able to use it. High-end computing has been overly limited to people who are really expert in programming. We have to not only go for very high performance, but for very high productivity." ▸

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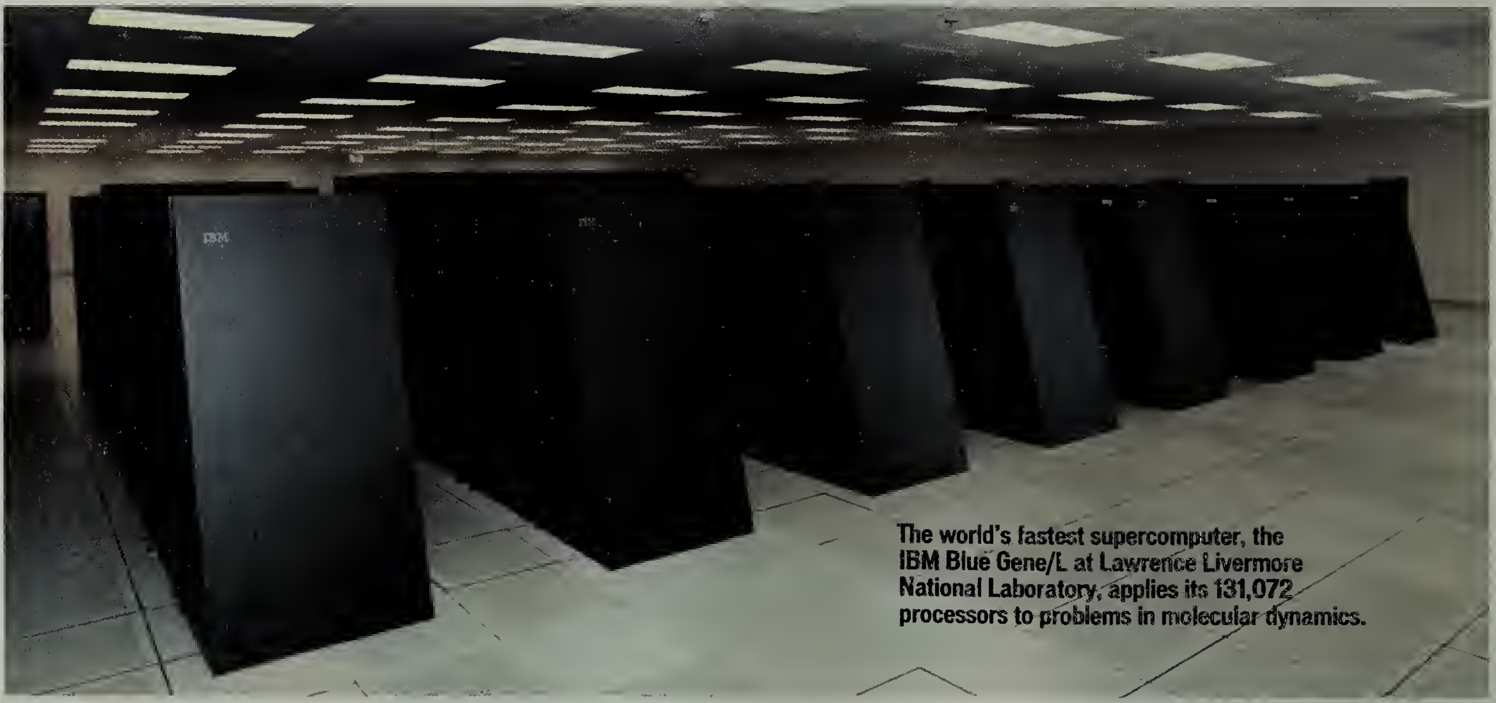
*Ulfelder is a freelance writer in Southboro, Mass. Contact him at steve@ulfelder.com.*



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# Job Interview Raises Plenty of Questions

**Our manager thinks about changing jobs but finds that the applicant is sometimes the better-prepared party. By C.J. Kelly**

**SECURITY MANAGER'S JOURNAL**

EVEN THOUGH I had promised myself I was going to settle down and be happy in my current job, I interviewed for a security manager position at a large medical center. It was closer to home and offered better pay, and the gung-ho recruiter made it sound like there might be interesting projects to work on.

I met with the CIO, the directors of IT and software development, and the director of internal audit, in that order. They all asked what my ideal job would look like. This perennial job-interview question always makes me laugh to myself, since my ideal is no job at all.

I am honest to a fault, but there are some things you can't say in an interview, so I have learned how to phrase the truth so that I don't look like a complete idiot. I said that having enjoyed a few years of independent technical security assessment consulting, I would go back into that line of work full time if the business climate was right. Meanwhile, I am looking for a career opportunity that will allow me to contribute in a meaningful way. Blah, blah, blah.

## No Hollywood Ending

The unvarnished truth is that I want to write a book that would become the basis for a hit movie series, and then travel the world and write stories about exotic places. The only technology I would hang on to would be a wireless laptop and cell phone. I don't want to ever look at another firewall configuration as long as I live.

But if I wasn't exactly transparent about what I want to be when I grow up, they weren't too sure about the position they were trying to fill. They all had different answers when I asked what they envisioned the new person in this position doing.

That's not too unusual, but it was only the beginning of the confusion. The job description on the medical center's Web site suggested that this security manager would report to the CIO, but I found out it was being moved under internal audit. In fact, the position had changed dramatically in the past week or so, and the CIO was becoming acting chief security officer (CSO).

Now, I have strong experience in technical security, but it's a very different world from internal audit. Internal auditors talk about risk management, while security techies talk about specific device configurations. They are talking about the same things, but in different languages and from different perspectives. I know how to bridge the gap between the two, and I understand how open ports on the firewall, for example, can become a huge risk for a company and have material impact. But that doesn't mean I speak the language of auditors.

> "They weren't too sure about the position they were trying to fill. They all had different answers.

## Muddled Organization

It was the end of the day when I finally met with the director of internal audit. By then, I had more questions than answers. But if one of those questions was whether this job would work out for me, it was pretty much answered when he said, "I have met with several people who have as many acronyms after their name as you do, but they are just going to do what I tell them to do." I just had to laugh and say, "That has never been me. I'm kind of opinionated."

He must have realized that I was concerned about reporting to internal audit, and our discussion led me to draw an organizational chart on a sheet of paper. On my chart, IT was separate from internal audit and from what I called "business controls." Under that heading were information security, disaster recovery and business continuity. Each of these three disciplines reported to a separate C-level executive, with IT reporting to the CIO, internal audit to the chief financial officer or CEO, and business controls to either the chief operating officer or CSO. This avoids the problem of the fox guarding the henhouse.

But my ideal organization is likely to be adopted about the time that I begin collecting royalties from my *Harry Potter*-style movie franchise. The bottom line is that most organizations, and certainly this one, don't understand the magnitude of the tasks they want these disciplines to undertake, and they aren't yet willing to properly staff for it all.

As we ran out of time, the internal audit director asked whether I would meet with him again so that he could convince me that the position could flourish under his department, given a chance and the right leader.

I had the Presidents' Day weekend to think. As I reviewed things, the organizational dynamics were a red flag. The fact that the CIO had rushed to have himself named acting CSO even though that meant surrendering a security direct report to the auditor led me to believe that he wasn't too keen about security being moved out from under him. The software development director was looking for application security guidance, which I am a little weak on. And then there was the audit director, who was new to the organization, full of ideas and wanted to shake things up and own information security. At least the IT director knew that his "WAN guys" had security nailed down, which would make his team an important ally. But what a mixed bag.

And in that bag, they wanted technical security architecture review, security assessment, security awareness training, internal audit, documentation, leadership and a whole lot more. What they need is at least one technical security expert in IT, security training for the IT guys, a person devoted to security awareness and training, internal audit as a separate function, employees devoted to disaster recovery, and business continuity planning under a separate banner. It came to me that maybe I should just hold on and write that book. ▶

### WHAT DO YOU THINK?

This week's journal is written by a real security manager, "C.J. Kelly," whose name and employer have been disguised for obvious reasons. Contact her at mscjkelly@yahoo.com, or join the discussions in our security blogs: **computerworld.com/blogs/security**

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## SECURITY LOG

### Movie Review

**Firewall, starring Harrison Ford**

Indiana Jones as an infosec action hero? I had to see that. The question was, would I be rolling my eyes at every implausibility on the screen? Surprisingly, the technical security aspects were pretty accurate for Hollywood: a locked-down data center with no remote access, servers with no available USB or serial ports, a sprinkling of biometrics, smart-card technology and strong physical security. I had a hard time figuring out how our hero connected a fax machine's scanner bar to an MP3 player to garner bank account numbers from a screen; in fact, I almost took apart my fax machine and my son's MP3 player to see if I could duplicate this feat. But what the heck, it's only a movie. Still, if I were the bad guy, I would have found an easier way to steal the bank's millions than to go up against Harrison Ford.

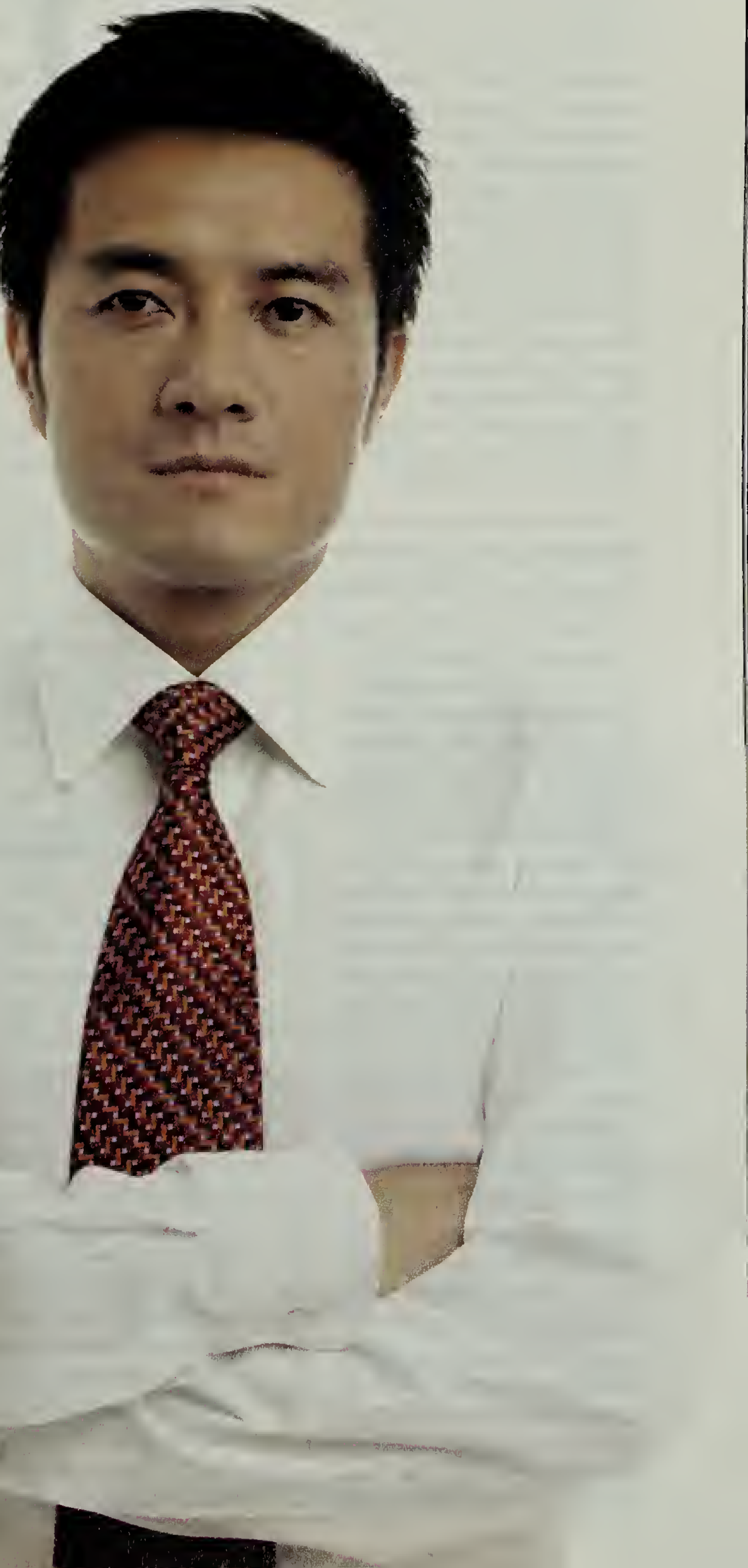
– C.J. Kelly

### IPolicy Centralizes Firewall Controls

IPolicy Networks Inc. today announced the general availability of Version 2.5 of its iPolicy Security Manager and Intrusion Prevention Firewalls for enterprises and service providers. The product allows central management of up to 600 firewalls across a geographically dispersed network.

### Virus Is a Mystery

A mystery is deepening around a virus that can pass from a PC to a mobile device. The Mobile Antivirus Researchers Association said last week that it anonymously received the code, named "Crossover." Antivirus vendors, however, said they haven't been allowed to analyze it.



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## BRIEFS

### Parasoft Rolls Out New Testing Tool

■ Parasoft Corp. has released Parasoft SOAtest 4.5, an automated Web services testing product. The application features enhanced service-oriented architecture governance controls for development, broader test management support and automated testing of the Business Process Execution Language, according to the Monrovia, Calif.-based company. SOAtest 4.5 provides validation of compliance with a wide range of Web standards, including those set by the Organization for the Advancement of Structured Information Standards. It also offers best practices for security, maintainability and reusability, and integrates directly with Mercury Interactive Corp.'s TestDirector and IBM's Rational TestManager. It is available now for Windows 2000, Windows XP, Linux and Solaris. Pricing starts at $3,995.

### PeopleCube Updates Resource Application

■ PeopleCube in Waltham, Mass., has unveiled the latest version of its Resource Scheduler software, which is available now as a hosted application or through a standard software licensing agreement. Resource Scheduler, a Web-based meeting-room and resource management application, now offers two add-on services and asset management modules, according to the company. Under a standard license model, pricing starts at $40 per user, while hosted delivery starts at $3 per user plus start-up fees, based on customer requirements.

### LSI Logic Launches New Line of HBAs

■ LSI Logic Corp. in Milpitas, Calif., has introduced a family of serial-attached SCSI host bus adapters for internal and external storage. The new line includes one four-port controller and three new eight-port controllers, as well as hardware-based RAID functionality. Retail prices range from $205 to $260.

DOUGLAS SCHWEITZER

# A Broadband Primer For Telecommuters

ONE GENERALIZATION we can make about computing is that over time, most technology items become cheaper, while at the same time, they become faster. This is true of broadband in its most common forms. Both Digital Subscriber Line (DSL) and high-speed Internet cable services are available to millions of business and residential users worldwide and are now cheaper and faster than ever. Which is better for your situation as a telecommuter depends on your needs as well as what you or your company is willing to pay.

DSL employs sophisticated modulation schemes to pack data onto copper wires and uses existing telephone lines to connect your home directly to your local phone company in order to link you to the Internet.

**DOUGLAS SCHWEITZER** is a freelance writer and Internet security specialist in Nesconset, N.Y. Contact him at **dougneak@juno.com**.

Satisfied users cite a variety of reasons for their approval of DSL. The direct connection between your phone and the phone company makes DSL very secure. DSL is just as reliable as your phone line, and it boasts speedy upload and download rates. Another advantage is that you can be online and on the telephone simultaneously.

When you sign up for DSL, your local phone company will usually offer you the option of installing the equipment yourself and will provide you with a modem to convert the phone company's data format to one that is compatible with your own network. They'll also provide one filter for each regular telephone in your home so that when someone is online, Internet traffic noise won't interfere with your phone conversations.

What about the downsides of DSL?

A frequently cited disadvantage of DSL is that customers must be located within approximately three miles of the central telephone station.

Another common complaint is that the signal can become degraded. As I mentioned, users have to install DSL filters onto their telephone jacks because the telephone lines carry both normal voice transmission and DSL signal frequencies. The presence of the DSL signal on all of the phone wires in the house (especially when several devices are connected to the line) causes the degradation. One way around it is to install just one filter upstream from all of the phone jacks except the one that connects to the DSL modem. Not an easy task, especially when you're faced with older household telephone wiring.

If you decide to go with DSL, you'll be given options as to the speed and type of your connection. The most popular is Asymmetric DSL, or ADSL, where the download rates exceed the upload rates, because most users tend to download more than they upload. Within ADSL, bandwidth speeds vary as well. For example, Verizon's basic service downloads at 768Kbit/sec. and uploads at 128Kbit/sec.

The next level of service that providers typically offer will download at 1.5Mbit/sec. and upload at 384Kbit/sec. The elite ADSL level provides downloads between 3Mbit/sec. and 5Mbit/sec. and uploads at 640Kbit/sec. to 1Mbit/sec. Not as popular for the home user is Symmetric DSL, which provides the same download and upload speeds. It's for businesses and power telecommuters who send and receive lots of data.

An increasingly popular alternative to DSL is to go online in your home office via cable lines. This option is available nearly everywhere you can sign up for cable television. Its appeal lies in the "always on" connection and, theoretically at least, very good connection speeds.

Your local cable provider supplies a cable modem that connects to the cable line and an Ethernet cord that leads from the modem to your computer. The Internet provider station is connected to the cable company via fiber-optic cable. Then the cable company's fiber-optic line connects an entire neighborhood via the shared cable-modem connections.

Because access is shared among all enrolled computers in your neighborhood (it's like a LAN — but it's for the whole community, not just your house), bandwidth may suffer, as can security. Bandwidth decreases as enrollment increases. While it is possible to attain downstream connections at 30Mbit/sec., in actuality, you're more likely to get 500Kbit/sec. to 700Kbit/sec. (and 128Kbit/sec. upstream). In general, you'll realize much slower upload speeds compared with download speeds. And having a shared network inherently reduces the security of each individual on the network.

Both DSL and cable-modem connections enjoy widespread popularity, so you'll have to weigh the pros and cons according to your individual needs. And you may not even have to make a decision — it's possible that only one is available in your neighborhood. ▸

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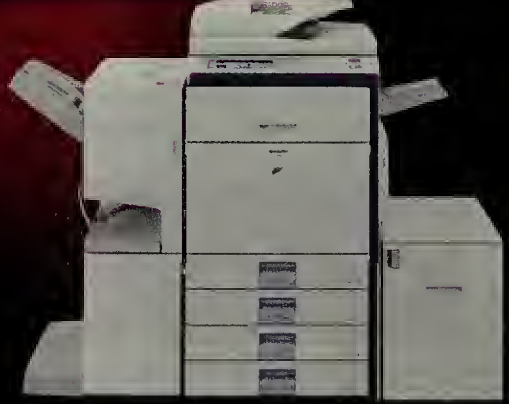

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# MANAGEMENT

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### The Sweet Smell of Success

Skunk works can help you develop a promising project with less risk that the plug will be pulled prematurely. Here are the do's and don'ts. **PAGE 50**

### Bringing Homegrown IT to Market

In the year since it launched a division focused on reselling some of its in-house IT, Procter & Gamble has found that the effort led by Bill Metz has yielded returns that are more than monetary. **PAGE 52**

**OPINION**

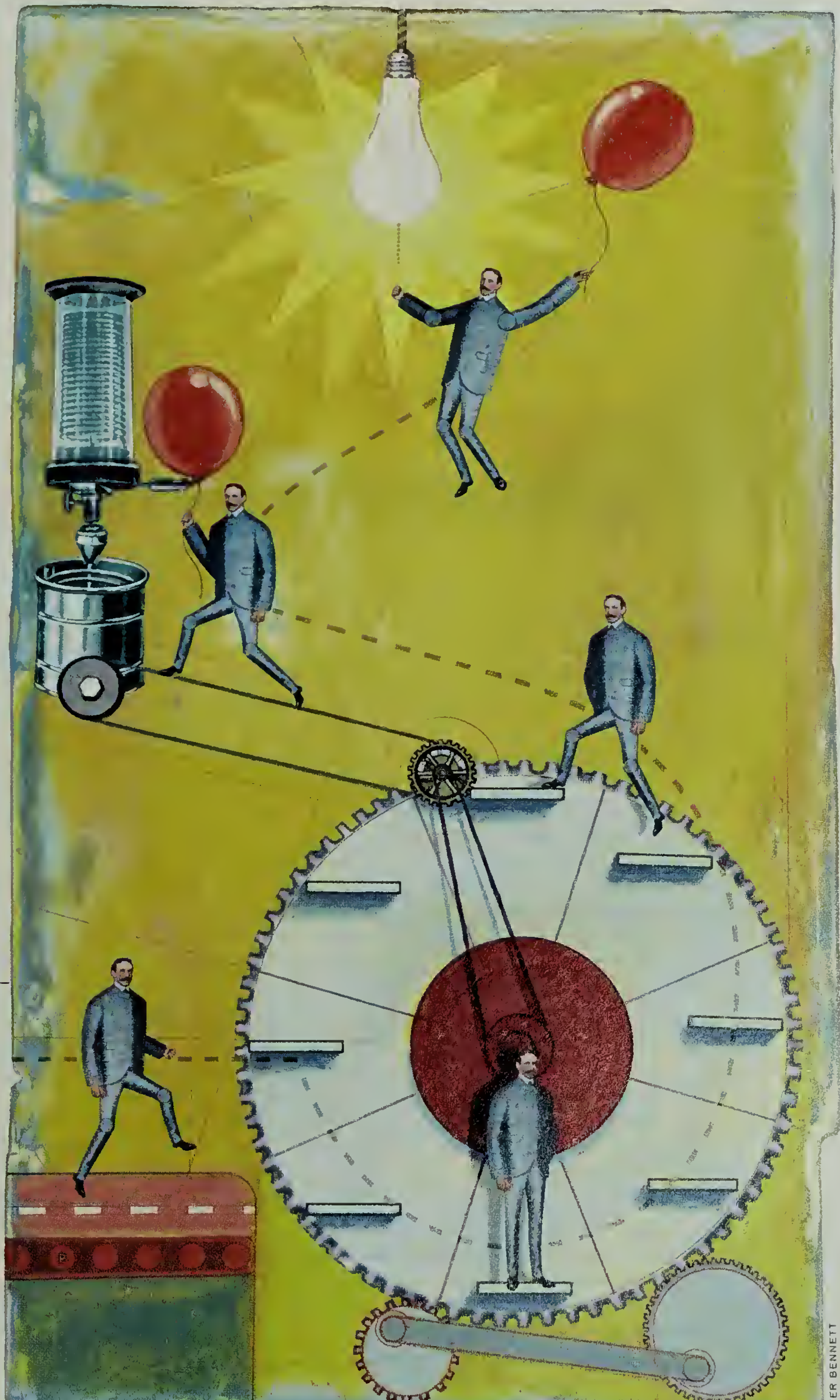
### What's an MBA Good for – Really?

We know all about the credential and the cost, says Paul Glen, but what about the content? He looks at what the coveted degree does — and doesn't — provide. **PAGE 54**

# Jump-start Innovation

**By** Mary Brandel

## Great ideas don't just happen. Here's how to light up your IT group.


PETER BENNETT

ABOUT A year and a half ago, a group of IT directors at Partners HealthCare System Inc. took a look at their 1,200-strong organization and made a bold admission: They weren't as creative as they used to be. Despite pioneering technology efforts in the '80s and '90s, the IT group faced a health care landscape that was more complex and competitive than it was 10 years ago.

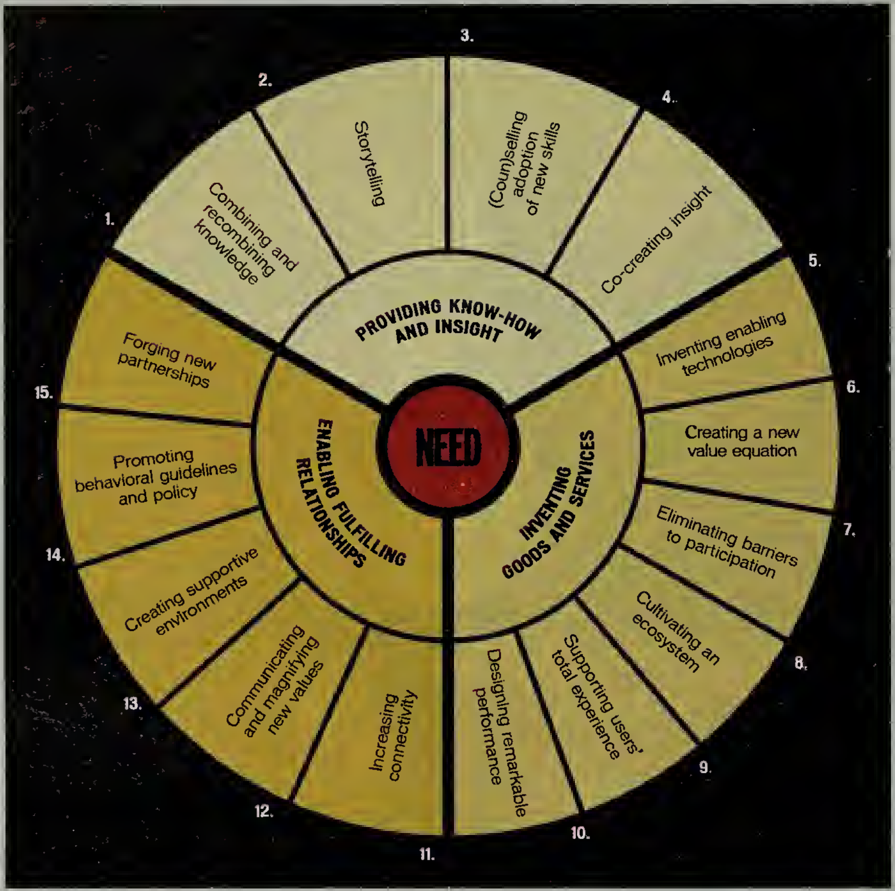
"One of the things that occurs when you grow in size is you lose a bit of your entrepreneurship and innovation," says Mark Woodward, corporate director at Boston-based Partners. "We wanted to try to get some of that back."

So Woodward researched the concept of innovation — what it looks like, how it's achieved and how an organization can incorporate it into its culture. "You can't just flip a switch," he says.

His research culminated in the January launch of a 16-week program that takes participants on a carefully planned but ultimately open-ended ride to becoming innovators. The 16 participants are divided into four groups, and each team is handed a challenging business problem to resolve. All are then deliberately exposed

## GO Where Your Advantage Lies

Meet customers' needs by innovating in one or all of the three basic competencies (inner circle) using any of several approaches (outer circle).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INVENTING GOODS AND SERVICES
ENABLING FULFILLING RELATIONSHIPS
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2. Storytelling
3. (Coun)selling adoption of new skills
4. Co-creating insight
5. Inventing enabling technologies
6. Creating a new value equation
7. Eliminating barriers to participation
8. Cultivating an ecosystem
9. Supporting users' total experience
10. Designing remarkable performance
11. Increasing connectivity
12. Communicating and magnifying new values
13. Creating supportive environments
14. Promoting behavioral guidelines and policy
15. Forging new partnerships

SOURCE: STONE YAMASHITA PARTNERS

### Providing Know-how And Insight

**1. Combining and recombining knowledge.** Indexing Web content for easier access and use.

**2. Storytelling.** Nike Inc. imbued its athletic wear with a story: "Do it."

**3. (Coun)selling adoption of new skills.** Hewlett-Packard Co.'s executive briefing center changed how its customers experience its offerings.

**4. Co-creating insight.** Wikipedia transformed an encyclopedia in to a powerful, co-created knowledge base.

### Inventing Goods And Services

**5. Inventing enabling technologies.** The microchip enabled innovation, from cars to cell phones to medicine.

**6. Creating a new value equation.** Trader Joe's "Two-Buck Chuck" shifted wine drinkers' expectations from origin to taste.

**7. Eliminating barriers to participation.** Grameen Phone Ltd.'s microloans and kiosks in India enable participants to rent phone service in villages that were previously without it.

**8. Cultivating an ecosystem.** Apple Computer Inc.'s iPod's ecosystem includes iTunes, the iTunes music store, downloadable music and videos and product extensions from partners such as Bose Corp.

**9. Supporting the total user experience.** Online channel integration enables seamless buying, delivery and return of goods.

**10. Designing remarkable performance.** Oxo International Ltd.'s ergonomic kitchen tools are designed from the user backward.

### Enabling Fulfilling Relationships

**11. Increasing connectivity.** Research In Motion Ltd.'s BlackBerry.

**12. Communicating and magnifying new values.** Virgin Group Ltd.'s businesses are linked by cultural values that disrupt competitors and appeal to customers.

**13. Creating supportive environments.** Herman Miller Inc. changed offices and work with its open plans in the 1960s.

**14. Promoting behavioral guidelines and policy.** EBay's core innovation wasn't technology; it was a policy for fair trading on the Web.

**15. Forging new partnerships.** Wells Fargo & Co. provides in-store banking through a partnership with Safeway Inc.

to new influences far from the comfort of their cubicles. For instance, they are immersed in the work of users in relevant hospital departments, listen to guest speakers and go on thought-provoking field trips such as a visit to the MIT AgeLab. While in the program, they are completely mobile, operating with just a laptop, a handheld device and a common meeting space shared with other program participants.

The hoped-for result? Individual metamorphosis, the rise of an innovation culture in IT and maybe even proposed solutions to the assigned business problems.

### SERIOUS BUSINESS

Partners' program illustrates just how seriously some organizations are taking innovation. Although innovation has always been important, there's a renewed emphasis on right-brained approaches to succeeding in today's increasingly global, hypercompetitive, unforgiving business world.

"There has been an understandable focus on efficiency and globalization and outsourcing," says Jim Eichner, vice president of advanced technology at Pitney Bowes Inc. in Stamford, Conn. "But a lot of those things have played out to a large degree. People are wondering how to differentiate themselves, and they have to innovate to do that."

"After the dot-com bust, companies kind of went internal," notes Sally Grant, CIO at the California State Automobile Association (CSAA) in San Francisco. "But efficiency and process are not going to take us to greatness." Or to put it another way, "You can't downsize to success," says Scott Anthony, a partner at Innosight LLC, a consultancy in Watertown, Mass.

But the goal is not innovation for its own sake; a key element of current efforts is to stop reacting to what customers are demanding and start anticipating their needs even before they've had a chance to articulate them.

Examples of this business trend include The Procter & Gamble Co.'s Swiffer, a replacement for the old broom-and-mop routine, and Earthbound Farm's prewashed salad mixes. "It's about changing the status quo and delivering something of such value that users adopt it and thereby change what's 'normal,'" says Tom Andrews, a principal at Stone Yamashita Partners, a consultancy in San Francisco.

What does all this mean for IT? Well, just as businesses need to differentiate their brands, IT also needs to prove its worth, and it can leverage innovation to accomplish that goal.

"IT has to think of themselves like a stand-alone business," says Joyce Wycoff, co-founder of Innovation Network, a consultancy in Bakersfield, Calif. "Somehow, they have to come up with a vision that both excites them and creates value for their customers."

But for many IT managers, telling their organizations to be innovative is about as helpful as telling someone to have a nice day. It's pretty easy to imagine a few eye rolls among people who have already watched their organizations jump on other expensive and not-always-successful management theory bandwagons.

That's why jump-starting a culture of innovation goes far beyond pinning slogans on walls. For one thing, it's important to create a process for innovation that's distinct from linear project management efforts, which, as Andrews points out, are optimized for decisions, not for trying out new ideas.

This means replacing familiar steps like planning, analysis, design, construction and quality testing with new ones like problem framing, status quo questioning, observation synthesis, hypothesis mapping, prototyping and feedback-gathering.

Key to the process is directing your efforts at a question or problem that you're trying to resolve. Although you want people to think outside the box, you need to impose some type of constraint or else you get what Wycoff calls the "popcorn effect" — wild ideas bouncing around with no purpose in sight. "The old mind-set was to create a bunch of ideas, get out of the box and let the creativity flow," she says. "But now we realize it's better to spend a lot of upfront time defining what we want to do and exacting criteria for success."

For instance, when developing Partners' innovation program, Woodward polled directors on long-standing business issues they wanted to address. He came up with four: improving patients' telephone interaction with the hospital, establishing a regional data exchange for hospitals to share information, providing better trend data on chronic illnesses and learning how to commoditize Partners' IT infrastructure.

The best way to know what problems exist is to experience firsthand how customers interact with the products and services you offer. "If you look at a highly innovative organization, the first characteristic you see is awareness — awareness of the needs that need to be fulfilled and of the know-how that's around you," says Robert Price, former CEO of Control Data Corp. and

*Continued on page 47*

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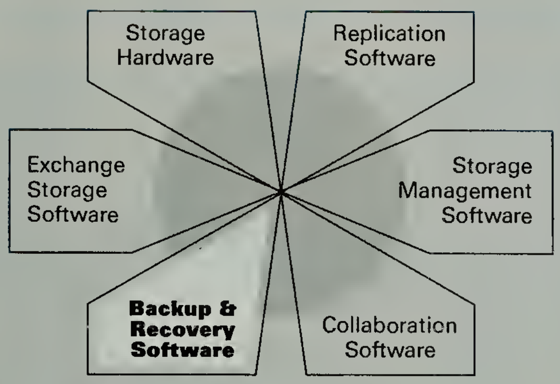
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*Continued from page 44*

author of *The Eye for Innovation: Recognizing Possibilities and Managing the Creative Enterprise* (Yale University Press, 2005).

At Amazon.com Inc., for instance, the mantra is, "Start with the customer and work backwards," says Werner Vogels, CIO at the Web retailer. Technology staffers are also regular users of the site, and most undergo a training program in which they take customer calls and respond to e-mails. At weekly meetings, they review e-mails that customer service has received and address frequent questions. "People have to feel responsible that we're really serving customers," Vogels says.

Similarly, when Pitney Bowes wanted to develop a next-generation call center system to improve interaction between customer service representatives and callers, it had IT staffers spend weeks in the call center, listening to calls and studying staff needs.

In innovation circles, embedding yourself within a community of people to see the world through their eyes is sometimes referred to as "ethnography," and it's highly encouraged.

"For the IT department to be motivated by true human insight is a wonderful thing," Andrews says.

The idea for JetBlue Airways Corp.'s "paperless cockpit" germinated from just that type of insight, says Todd Thompson, CIO at the Forest Hills, N.Y.-based airline. "It came from sit-

## Start Today

An innovation culture doesn't happen overnight, but there are things you can begin to do today to encourage innovation and creativity.

**Look for duct tape.** Gain insight into unspoken customer needs by spending just a little time in their environment. Joyce Wycoff, co-founder of Innovation Network, suggests looking for places where duct tape or yellow stickies have been applied, or where a user has kludged something together to accomplish a task.

**Act on direct observation.** Schedule one day a month for IT staffers to spend with users and let that experience inform the work they do, suggests Tom Kelley, general manager at Ideo. After six months, "I'm willing to bet IT's perceived value will go up," he says.

**Adopt a "reverse mentor."** Ask a younger worker to keep you apprised of trends outside your purview, Kelley says. The practice has helped him understand blogging, podcasting and even why younger people don't tend to wear watches (answer: cell phones keep perfect time).

**Do brain exercises.** Brainstorm with people in different industries. Analogies from architecture or surgery might apply to your own problem.

**Read.** Other creative-thinking techniques are suggested at *www.thinksmart.com* and by Barry Nalebuff and Ian Ayres in their book, *Why Not? How to Use Everyday Ingenuity to Solve Problems Big and Small* (Harvard Business School Press, 2003). For instance, look for solutions in other contexts that can apply to your own, like "flipping" things, as both Heinz and Hunt's did with ketchup bottles to improve ease of use.

**Create a "war room."** "Teams need a place to continually come back to that's not torn down at the end of the day," says Tom Andrews, a principal at Stone Yamashita Partners. It has to be private enough for them to post strategy maps, hypotheses, insights and ideas on the walls or on whiteboards. "It gives you the ability to scan the material and make connections in a vastly more superior way than through language or a PowerPoint document," he says. "It's vital to have a collective memory."

– MARY BRANDEL

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ting in the cockpit and seeing pilots pull out books from those heavy cases they carry around," he says. And after sitting in on morning meetings with managers while they continuously reviewed operations statistics — such as average baggage-retrieval or airplane-turnaround time — IT also developed a dashboard system that pushes that data in real time to their desktops.

After all, Anthony points out, much of innovation is facilitating the jobs users are already trying to accomplish — not enabling them to do something new. "You need to find stuff that customers haven't raised their hands yet to talk about," says Tom Kelley, general manager of Ideo Inc., a design consultancy in Palo Alto, Calif.

## LOOKING OUTSIDE

Users aren't the only place to turn for ideas, however. Companies striving to be innovators also look outside their four walls for inspiration. Not only does this get the creative juices flowing by forcing people out of their usual way of seeing things, but it also may help you find someone who has already tackled a problem you want to solve.

P&G has famously established a practice of "open innovation" by connecting with outside experts and partners, with the goal of getting 50% of its new ideas from outside the company. And no wonder: A late-2005 Booz Allen Hamilton Inc. study of 1,000 worldwide public companies shows no relationship between higher levels of research and development spending and high levels of growth, enterprise profitability and shareholder return.

And it just makes sense. "If you think of innovation as problem-solving and you're the problem-solver, you'll take help wherever you find it," Price says.

Some project teams visit museums or hardware stores or invite in guest speakers and performers — even mimes — for inspiration, Wycoff says. Or they look for an example of a company that's facing a similar issue but in a different industry or environment. For instance, participants in Partners' innovation program will visit companies outside the health industry, such as Fidelity Investments, State Street Corp. and P&G, for inspiration. Woodward can also imagine sending people to Google Inc.'s headquarters to help figure out how to commoditize Partners' own IT infrastructure.

"You need to think of your company as an ecosystem," Vogels says. "You want to leverage the intellectual power of the larger community. There might be a student in a dorm room with a bright idea [about] Amazon.com, and we'd like to foster that."

Pitney Bowes has benefited by reaching out to what might seem like strange bedfellows. After studying Web purchasing, the IT department collaborated with eBay Inc. as well as its own product development and marketing groups to carve out a niche for the company's otherwise traditional business. It developed a system through which eBay sellers can download postage and shipping labels. "Great companies get people together," Kelley says.

But diversity can also be found within a company, where hiring practices can encourage a wide range of input. At CSAA, Grant likes to hire staffers who reflect the makeup of the company's membership. "If you have a diverse workplace, you will get excellent input," she says.

At JetBlue, the company purposefully tries to hire at least some people from outside the airline industry, Thompson says. And at Partners, Woodward took pains to choose people for the organization's innovation projects who had no previous experience dealing with the business problem at hand. "We didn't want people to have preconceived notions," he says. "It's a risk and a higher learning curve, but we think it's worth it."

## CELEBRATE FAILURE

Businesses often find it hard to accept that innovation goes hand in hand with failure. "On a good day, nine out of 10 efforts will fail," Andrews says. "You want the failures to be as good a learning experience as the successes."

But doing that means changing the way companies view and even how they talk about unsuccessful projects. For instance, Andrews says, you might talk about a "failed idea" but not a "failed team." Instead of talking about "killing" an idea or project, refer to it as "putting it on the back burner." And if someone comes to you with an idea, don't point out all the things that are wrong with it; ask the person how they can make it even better for the customer, giving it a chance to morph into something successful. This attitude can promote thoughtful risk-taking because people will be less afraid of presenting ideas without a lot of data to back themselves up, Andrews says.

In fact, innovative companies often celebrate failure — literally. W.L. Gore Associates Inc., best known as the developer of Gore-Tex fabric, is known to end unsuccessful projects with champagne. Others hold "failure parties" in which refreshments are served and managers share with the staff their own failed project experiences.

Some use humor. After a new inflight snack idea was tested on JetBlue and then quickly jettisoned, "no one was fired or deeply chagrined," Thompson says. In fact, the episode became an entertainment device, as a picture of the innovator was posted on the company intranet, along with a contest to write an essay on why the change was silly. "There's a cultural acceptance that we're going to make mistakes once in a while if we're going to be innovative," Thompson says.

In the end, innovation is a slippery concept, demanding chaos and discipline, process and flexibility, New Age approaches and old-fashioned common sense. After all, the motivation to innovate often emanates from the everyday thought, "There has to be a better way." Says Price: "It's about really giving a damn about something and being determined to find the know-how to help you with that problem." ▸

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# How We Do It

## Views from three cutting-edge IT leaders

**1 AMAZON.COM INC.** According to CIO Werner Vogels, Amazon.com can never stop pushing the limits of innovation in the areas in which it excels, such as search, personalization and fulfillment.

"All these areas require enormous innovation to remain successful," he says.

To support that charter, the whole notion of IT at Amazon.com is purposefully vague. "There's no clear separation between the business and IT," Vogels says.

Instead, IT is organized into small, loosely coupled groups. These are dubbed "two-pizza teams," given that they are generally no larger than what you could feed with two pizzas, Vogels explains.

Each team is completely autonomous in developing an idea and is responsible for everything from scoping the problem to actually operating the service that implements the idea.

This brings the team into close contact with the customer that is using its service and allows for a very fast feedback loop to improve on the innovation.

Key to making this a successful model, Vogels says, is to hire technologists who thrive on working in small teams with equally talented people.

**2 JETBLUE AIRWAYS CORP.** The way Todd Thompson, CIO at JetBlue, sees it, everything the company does is innovative, from e-ticketing to the televisions in each seat back.

"We set out specifically to change the way customers experience the airline," he says.

To support that goal, teams within IT are aligned with business groups, and a project manager is assigned to each business department. IT workers spend at least one day per month embedded with users. That way, Thompson says, "when they talk about checking in a customer or what it's like in the cockpit, we know what that means."

JetBlue keeps its development process light through quick prototyping and rapid development methods, as well as Microsoft's .Net architecture, Web services and object-oriented methods.

The IT group is always ready to respond quickly to good new ideas. Thompson boasts that high-impact/low-effort projects can blast from charter to execution in one day.

For JetBlue, innovation is a make-or-break proposition. "The industry is so competitive, we've had to do things differently," Thompson says. "A key to our ability to innovate is to understand customer needs on a rubber-meets-the-road basis and recommend technology initiatives that improve the experience of crew members and customers."

**3 PITNEY BOWES INC.** For the seven years he's worked at Pitney Bowes, Jim Eichner, vice president of advanced technology, has met quarterly with company executives to review what's happening with technology and innovation within the company.

What has changed in the past four years is the emphasis on customer-centric innovation.

"We have a heavy focus on getting out of the lab and going to customer sites, using tools borrowed from anthropology to understand customers in their world, such as observing people, artifacts, settings, relationships and work process," Eichner says.

Those observations are used to create a hypothesis of a customer need, followed by a brainstorming process that leads to what Eichner calls a low-fidelity prototype. This is a system or device that can be built in a couple of days and put in front of customers to generate feedback.

This feedback helps create a value proposition, which often results in new product development. In addition, all ideas serve a pre-existing strategic opportunity, such as how to get people who now use stamps to start using metered mail.

– MARY BRANDEL

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# THE Sweet Smell of SUCCESS

Skunk works can help you develop a promising project with less danger that the plug will be pulled prematurely. **By Judy Artunian**

IF NECESSITY is the mother of invention, then a skunk works is her creative big sister. And if you follow the logic of that family tree, necessity is also the mother of skunk works.

James Dallas, former CIO at Atlanta-based Georgia-Pacific Corp., recalls becoming a skunk works devotee after seeing too many promising projects labeled failures before the development team had a chance to get all of the kinks out. "Within a large corporation, whenever you do something, the spotlight is on it," he says. "When it's not successful, people can be too quick to cancel it. With skunk works, you can get the lessons learned in a real roll-up-your-sleeves, hands-on manner that is away from the spotlight."

Skunk works are small research and development groups formed to produce a technology or product. While the goal of a traditional skunk works is to develop a commercial product or technology, the aim of an IT skunk works is to solve an internal business problem.

The skunk works concept dates to 1943, when a group of employees at Lockheed Aircraft Corp. designed and built the first fighter jet, even though the company didn't get a formal contract from the U.S. Army Air Force until the employees were four months into the project. They took the name "Skonk Works" from the "Li'l Abner" comic strip (and changed it to Skunk Works when cartoonist Al Capp complained). Decades later, another skunk-works-bred product made headlines when Apple Computer Inc. introduced the Macintosh computer.

IT skunk works projects vary in size and scope, depending on the financial resources and manpower available. On the ambitious end of the spectrum is the Tour Optimization Planning System (TOPS) developed about three years ago by a Georgia-Pacific IT skunk works. TOPS saved the company several million dollars annually by optimizing the routing of its huge dedicated fleet of trucks, says Dallas.

"It allowed us to factor in drivers, trailers, destinations and traffic lanes," he says. "That skunk works lasted over a year. We kept going through iterations. The first couple didn't work, but we knew there was value there, so we didn't stop it."

At Bacon's Information Inc. in Chicago, Scott Thompson, senior vice president of IT, implements a more modest form of skunk works when his department needs to analyze new technologies and products. "It's difficult to take on new technology these days because there are so many options and so much complexity regarding how these things fit together," says Thompson. "Skunk works is an appropriate approach to building some expertise in order to be able to evaluate technology."

## Out of the Public Eye

A skunk works team usually consists of a handful of employees from the IT department who have demonstrated a knack for taking a fresh look at how technology can serve the organization.

To reduce distractions, many IT managers tuck the skunk works somewhere away from the day-to-day grind.

Keeping the operation under wraps is a key component of a true skunk works. According to Rick Swanborg, president and founder of Icex Inc. in Boston and executive in residence at Boston University's School of Management, "Sometimes CIOs have no alternative because some businesses consider anything technology-related as nothing more than a cost center. They say, 'Why are you spending time looking at technology? You just need to control costs.' " Twenty years ago, Swanborg was involved in skunk works that developed early versions of distributed LANs and portable computers.

Executives are more likely to accept and help fund a skunk works if the CIO can show how the project's goals are aligned with corporate objectives.

Experts advise keeping tabs on a skunk works but stopping short of imposing a schedule. "The nature of research is uncertain. It's hard to predict when you'll discover something," says Jeffrey Kaplan, a director in the Washington office of PRTM Management Consultants and author of the book *Strategic IT Portfolio Management* (PTRM Inc., 2005).

### DO's and DON'Ts

**DO** establish a relationship with vendors whose products are at the heart of your skunk works, so that they will help you resolve performance problems.

**DO** encourage skunk works staffers to immerse themselves in the business environments in which the product or technology under development would be used.

**DO** congratulate the team for its efforts, even if its work doesn't culminate in a project.

**DON'T** allow unfettered experimentation. It can run up costs and stall progress.

**DON'T** be in a hurry to put your technology into production. Make sure it's stable and scalable.

**DON'T** wait for a crisis before you establish a skunk works to solve a problem.

At Georgia-Pacific, Dallas required his skunk works to come back with the results of a hands-on test in the first 60 days. For example, a skunk works team that was developing radio frequency identification technology several years ago had to apply RFID tags and determine what percentage had been successfully read by the sensors. The skunk works squads knew that without that first deliverable, which had to be produced for less than $50,000, their project could be axed. "You would be amazed by how creative that would make people," says Dallas. "Depending on the technology, they'd go out and partner with a vendor, and the vendor would get creative with them."

When is a skunk works endeavor ready to become a legitimate project? "If you're starting to develop code and a prototype, you're on the fringe of a legitimate project," says Kaplan. But first, be sure that you have a proposed solution that meets a clear need and is viable, given technological and funding limitations.

## Funding the Works

Skunk works aren't economically viable for some IT organizations. "I've seen companies that spend 99% of their IT budget purely on operating and maintaining their installed base. I would never tell those companies to allow any skunk works," says Kaplan. But he says businesses with large IT budgets and discretionary spending should have some skunk works. "But they should work on the most strategic issues and on solutions where the payoff is in the tens to hundreds [of] times the cost of the investment," he says.

Dallas says he has used dollars on hand for infrastructure investment or some of the contingency funds earmarked for large projects.

In the end, there is no guarantee that a skunk works will deliver a breakthrough. Kaplan advises CIOs to view skunk works as a gamble by telling themselves, "If nothing comes of it, well, nothing ventured and nothing gained." He adds, "If you can't say that, then you shouldn't be doing it." ◆

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# Bringing HOMEGROWN IT To Market

By Thomas Hoffman

Procter & Gamble's initiative to sell some of its in-house IT is full of challenges, but the returns are more than monetary.

WITH NEARLY 300 brand-name products sold around the world, The Procter & Gamble Co. is renowned for its innovation. Throughout its 169-year history, the consumer products giant has applied its technological know-how to everything from superabsorbent diapers to structured paper towels.

Now P&G is applying its innovation prowess — and marketing muscle — to IT. By marketing some of its internally developed IT, P&G is gaining additional revenue while improving its own in-house IT products and services.

The roots of P&G's IT commercialization efforts go back to the late 1990s, when former Chairman, CEO and President Durk A. Jager began preaching about innovation. His plans, which have since been continued by current CEO A.G. Lafley, included adopting great ideas from P&G's business partners and remarketing some of its own intellectual property (IP).

Case in point: P&G has remarketed Power Factor, a set of technologies and work processes designed to improve an organization's manufacturing throughput. P&G has been using these systems internally since the early 1990s and began licensing them to other companies in 2000, says Jack J. Ridge, director of external business development (EBD).

In 1999, P&G created the EBD group to identify internally developed IP, such as technologies and business processes, that could be repackaged and licensed to other companies.

P&G isn't the first company that has successfully marketed some of its internally developed IT. For example, The Men's Wearhouse Inc. in Houston developed software several years ago that stores a customer's sizes to make it easier for spouses to shop for their husbands, says Cathy Hotka, senior vice president of technology and business development at the Retail Industry Leaders Association in Arlington, Va. The software was eventually sold to Retek Inc., which has since been acquired by Oracle Corp.

### The Procter & Gamble Co.

**LOCATION:** Cincinnati

**BUSINESS:** Consumer products maker with nearly 300 products sold in 140 countries

**2005 REVENUE:** $33.13 billion

**2005 EARNINGS:** $4.58 billion

While other companies have sold homegrown technologies and IT capabilities, most have been one-off deals, notes Howard Rubin, an analyst at Gartner Inc. "That's a tough business model for most IT organizations to sustain," he adds.

In contrast, in February 2005, P&G dedicated a division to focusing exclusively on reselling internally developed IT-related IP. It's a one-person shop run by Bill Metz, a 15-year IT veteran of the company. Metz is constantly beating the bushes looking for technologies P&G can remarket and customers who might be interested in them. But he's not entirely alone. As manager of IT EBD, he works closely with P&G's legal and public relations staffs.

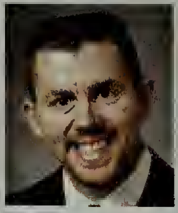
The technologies in question are not necessarily what one would associate with a consumer packaged goods manufacturer. For instance, a colleague at P&G's IT organization in Spain recently contacted Metz about a PC-based diagnostic system that the company developed. Physicians can use the software to quickly diagnose osteoporosis by viewing X-rays on a computer screen. As part of P&G's efforts to establish business relationships with health care providers, the system is currently being used for free by a group of doctors at 230 hospitals in Europe, says Edwin Erckens, an IT manager for P&G's pharmaceutical business in Barcelona. Metz is exploring opportunities to distribute the technology to doctors worldwide.

Robert Scott, vice president of innovation and architecture in P&G's global business services division, declined to share the dollar amount of the IT EBD group's first-year revenue, saying only that its targets are modest, since it's just beginning to mature.

## The Feedback Bonus

By licensing technologies to other companies, P&G also gets a nonmonetary return, says Mike Hock, associate director of the EBD group. It's able to apply customer recommendations to improve systems it runs in-house.

For example, in mid-2004, one of P&G's Power Factor customers, a soft-drink maker, complained that the system was too complicated to use, says Hock. So P&G spent the next six months simplifying how the individual modules work and interface with one another. Those changes benefited not only the soft-drink maker and other customers that license the technology, but also P&G's internal manufacturing groups, which use it as well.



> "Some lines get bites, and some don't. It's the nature of the work."
>
> BILL METZ, MANAGER OF IT EBD, P&G

Allowing customers to "commercially harden" a P&G system or business process "is a great way of feeding your innovation process," says Hock. To make sure this happens, Metz meets regularly with P&G's IT customer advisory boards to solicit their input on potential product improvements.

Companies that have successfully marketed some of their IT, such as Honeywell International Inc., typically have leaders with a strong mix of IT and business skills that have helped them to make the transition from IT to a revenue-generating entity, says Navi Radjou, an analyst at Forrester Research Inc. in Cambridge, Mass.

Metz has some business experience of his own. In the late 1990s, for example, he worked with developers in India to set up Web development work for P&G. That helped kick-start his role with EBD.

Still, he acknowledges that he faces some formidable challenges. These include conveying the commercial viability of some of P&G's technologies and work processes to internal IT staffers, some of whom see marketing IT as "a foreign notion," he says.

One of the toughest lessons that Metz has had to learn is that not every project he's involved in will turn into a money-maker. "Some lines get bites, and some don't. It's the nature of the work," Metz says.

P&G is admittedly learning along the way as its IT EBD group matures. Challenges include striking a balance between the time needed to commercialize and resell its homegrown IT and the burden that places on developers and IT managers.

"The biggest challenge is how [to market] our IP without dragging down people from their operational duties," says Scott. "I'm not sure we've worked out the balance."

Reselling IP isn't for everyone, says Radjou, partly because of a cultural reluctance to let go of something that gives you a perceived advantage. "IT is not something that most companies are easily willing to share," he adds.

But Metz and his colleagues are bullish about their future and proud of how they have positioned themselves against traditional IT vendors. "The kinds of solutions we use here are leading-edge," says Metz. "You're not going to get a 1.0 solution that hasn't been field-tested." ▸

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PAUL GLEN

# What's an MBA Good for — Really?

IT SEEMS that I get more questions about the MBA degree than any other career development topic. It appears to hold a uniquely prominent space in the minds of ambitious managers and would-be managers among the IT ranks.

But the questions are usually of a rather black-and-white nature: Should I get one? Will it be good for my career? Will it be worth the money? Is it worth the time away from the workplace to do it full time? Are part-time MBA programs too hard to do while working full time? Is it worth going back for an executive MBA once I'm already in management?

**PAUL GLEN** helps technical organizations to grow better leaders, and managers to perform at their best. He is the author of the award-winning book *Leading Geeks*. Contact him at **info@paulglen.com.**

What surprises me most of all is that among all the questions, few are about what an MBA is and what it isn't. Most of the discussion centers on the credential and the cost rather than the content. Few ask about what you learn or what it prepares you to do effectively. For something that can cost you as much as a house (if you include lost earnings), there is a surprising lack of consumer interest in the actual product.

But it's not just the consumers of the degree who seem indifferent to the content of the programs. Hiring managers looking for the credential on résumés often seem uninterested as well. They just seem to figure that people with name-brand MBAs must be prepared for leadership positions.

But the MBA mystique is being questioned in certain quarters. Among some of the most prominent business-school professors in the world, an open debate has erupted about the value of the MBA degree.

Before I upset too many of you, I should mention that I am not anti-MBA. I have one myself from Northwestern's Kellogg School and have taught in MBA programs at two universities, most recently the University of Southern California's Marshall School. But I think that the critics have some important points to make — ones that we in the practitioner community should note carefully.

Here are a few of the most important things the critics of this MBA infatuation have pointed out:

**MBA programs train students in business, not management or leadership.** Among those with the harshest words for MBA programs is McGill University professor Henry Mintzberg, one of the most celebrated thinkers and writers on business today. His perspective: "It is time to recognize conventional MBA programs for what they are — or else to close them down. They are specialized training in the functions of business, not general education in the practice of managing."

Most programs are structured around the functions of business, such as finance, marketing, strategy, human resource management and general management. And the courses emphasize technical understanding of these functional areas. However, an understanding of the general architecture of a business is not sufficient preparation to lead the people who inhabit it.

**MBA programs overemphasize analytical skills.** Many of the criticisms of the MBA are not new. Writing in the *Harvard Business Review* in 1971, J. Sterling Livingston, a Harvard Business School professor, offered this observation: "Formal management education programs typically emphasize the development of problem solving and decision making skills, for instance, but give little attention to the development of skills required to find the problems that need to be solved, to plan for the attainment of desired results or to carry out operating plans once they are made."

**MBA programs don't prepare students for the human element of management.** In overemphasizing analytical skills, they give short shrift to the softer skills that are more critical to the practice of management.

Edgar Schein, who is now an emeritus professor at the MIT Sloan School of Management, conducted interviews with alumni of the program and noted that "at an emotional level, ex-students resent the human emotions that make a company untidy. . . . [Few] can accept without pain the reality of the organization's human side. Most try to wish it away, rather than work in and around it."

So do you need an MBA? To answer that question cogently for yourself or others, I think it's time to start thinking about the value of the education in addition to the value of the credential. It has its place but isn't the end-all in pursuit of a fulfilling and lucrative career. ▸

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**MANAGER-CORPORATE SYSTEMS ENGINEERING**

at its Burlington MA location. Lead Corporate Systems Engineering team in providing internal escalation for all regional System Engineering teams in Central/Latin America, North America, Asia/Pacific and Europe, Middle East and Africa. Plan schedule & assign all Corporate System Engineering tasks, including interoperability testing with strategic third party vendors & Systems Integrators, producing Best Current Practices documents and providing Systems Engineering resources to customers and channel partners during product installations. Minimum Requirements: Master's degree (or equivalent) in Computer Science OR Employer will accept Bachelor's degree (or equivalent) in Computer Science plus five years of progressively more responsible work in the field; AND three years VoIP engineering experience. Experience must include: System implementation, deployment & support for customers; Data networking & telephony environments, specifically Next Generation IP services; LAN/WAN data architectures & routing protocols; and IP telephony architectures & VoIP protocols (SIP,H.323, MGCP, RTP/RTCP), & security & QoS, including MPLS/DiffServ. Please mail resumes/cover letters to: Andre Normand, Acme Packet, Inc.71 Third Avenue, Burlington MA 01803

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*Acme Packet, Inc. is seeking a*

**PRODUCT MANAGER**

at its Burlington MA location. Define market and customer requirements for current and future products. Write and drive through the Engineering organization product requirements documents (PRDs). Work closely with Engineering to develop, implement and maintain product release plans. Coordinate with Sales and Systems Engineering teams customer lab testing/trials/filed deployments. Produce sales and promotional tools and conduct sales training on new features and product functionality. Develop and maintain technical expertise on Company products/technologies. Travel to customer and strategic partner locations worldwide to gather relevant strategic and tactical requirements in managing product life cycle and product roadmap. Minimum Requirements: Master's degree (or equivalent) in Electrical Engineering or Telecommunications Engineering plus two years experience as a Systems Engineer or Product (Line) Manager. Experience must include: Data networking and Internet protocol based telephony environments (Next Generation, Packet Cable & Softswitch); VoIP signaling protocols (SIP, H.248, H.323, MGCP); and standard Bodies participation (ITU-T). Please mail resumes/cover letters to:Andre Normand, Acme Packet, Inc.,71 Third Avenue, Burlington MA 01803

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**Sales Engineer -**
Technical services to users of metrology instruments to ensure company's sales. Duties: material modeling, configuring instruments, performance measurement and analysis, and training in the operation of instruments. Refer to Job# APP-CA and reply to gbrake@soprainc.com or to SOPRA, Inc., 47 Queensland Rd., N. Billerica, MA 01862. Job in Santa Clara county.

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# IT Opportunities

**Due to our rapid growth, we have the following positions available:**

**Programmer Analyst**: Analyze, design, develop, code, test and maintain database management systems. Must have a Bachelors degree in Computer Science, Engineering or related + 3 years experience and the ability to use Mainframe, DBA, AS400 and Client-Server Tools.

**Project Managers/Leaders**: Lead a team of programmer analysts & data base administrators on development and maintenance of hardware and software applications as well as be responsible for project planning and quality assurance. Must have a Bachelors degree in Computer Science, Engineering or related + 5 years experience and the ability to use Mainframe, DBA, AS400 and Client-Server Tools.

**Business Development Managers/Directors**: Manage sales activities and achieve sales quota for assigned territory. Help Syntel's sales leadership in planning and rolling out an inside sales strategy. Must have a Bachelors degree in Computer Science, Business or related + 3 years experience.

**All positions are located throughout the U.S. and travel is usually required.**

Above positions commonly require any of the following skill sets:

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**DBA**: ORACLE OR SYBASE DB2, UDB

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**AS400**: RPG, ILE, Coolplex

Please forward your cover letter and resume
to: Syntel, Attn: Recruitment Manager
525 E. Big Beaver, Ste. 300
Troy, MI 48083
E-mail: syntel_usads@syntelinc.com EOE

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Lead IT Analyst Accordant Health Services has opening for Lead IT Analyst to code, test, & integrate software enhancements to corporate systems & provide support of corporate internet/intranet sites, using object oriented techniques. Candidates for this position must possess Object Oriented experience & must have at least 3 of the following skills: (.NET, ASP.NET), VB, C#, C++, JAVA, Visual Age, WebSphere, Visual Studio, Web Development (ASP, JSP, JavaScript), XML, Mainframe (OS390, Natural /DB2, JCL), a Master's Degree in Computer Science or BS + 5 yrs business programmming exp. Foreign equivalent acceptable. Provide resume: Accordant Health Services, ATTN: IS Director, 4900 Koger Blvd, Suite 300, Greensboro, NC 27407.

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Synerzy Software Solutions Inc., needs Identity Management expert w/exp in CA Siteminder, Sunone Access Manager, Sunone Directory Server, Novell E-directory. Shell scripting, Bea Weblogic ,IBM Websphere 6.0, MQ Series , EJB Security (JAAC), Java, Crystal Report Server and through knowledge of administering various web servers across different environments is a must. Experience in establishing single sign on with third party vendors is a major plus. For some positions we also accept any suitable comb. of education & exp. Frequent travel and/or relocation required. Send resume & salary req. to HR Manager, Synerzy Software Solutions Inc, 1 Austin Ave, 2nd Floor,Iselin,NJ 08830

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Sr.Systems Analyst to design, implement and supervise designing and implementation of web based applications for the finance industry. Shall design applications interacting with Sybase and Oracle applications on UNIX, Solaris and Linux platforms using Perl, CGI Protocol, HTTP, HTML & Perl DBI interface to databases. Shall use Java, C, C++, Sybase and Oracle. Job location Piscataway, NJ. Travel to client locations must. Req. 4 yrs of college education equivalent to a Degree in Computer Sc. Plus 5 yrs of experience as an I.T. professional. Must have 3 yrs exp in all above skills and tools. Mail resume to: Job NO. LS06-01, Logistic Solutions, Inc. 200 Centennial Avenue, Suite 209, Piscataway, NJ 08854.

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IP Networking/Telecommunications Manager wanted by CLAdirect, Inc. to manage, design & consult IP network & telecommunication infrastructure. Direct daily opertns. of dept. Research & supervise implementation of new technology. Must be versed in WAN, LAN, Network connectvty & Security, VoIP. Must have min. 4 yrs of PBX, Computer & IT exp. Competitive salary offered. Mail resume to: Carlos Gonzalez, HR, at 8600 NW 17 St., Ste. 140, Miami, FL 33126.

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Business Analyst w/Bachelors in Buss Admin or Comp Scie & 1 yr exp to write bus plans, prep prsentations, analyze buss process & strategic profile of the co using MS Project, Excel, Access, DBMS & Power Point. Study current buss process & systms to make prpsls, process consulting & s/ware dvlpmnt in order to streamline processes, reduce costs & increase effcncy. Reset co's strategic drctn by assessing the co's mrkt pstnng, orgnztn & key processes. Design & implmnt high quality documentation (version control). Mail res to: Galerie Shabab New York Inc., 112 Madison Ave, NY, NY 10016. Job loc: NYC

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**Programmer Analyst:**
Analyze, architect, develop, integrate, & test multi-tier, multi-os Enterprise Applications, System Integration & Implementation using VC++, HL7, SystemZ, XML & Oracle. Req. Bachelor's in Comp. Science or Engg. & 2 yrs of exp. Send resume to HR. eTransX Inc. 5214 Maryland Way, Ste 100, Brentwood, TN 37027

IT PROFESSIONALS AND MANAGERS NEEDED

MindTree Consulting, an established and expanding IT consulting company with headquarters in Somerset, NJ is searching for qualified IT Professionals (i.e., Software Engineers, Programmer/Analysts, Systems Analysts); Information Systems and Project Managers; and business development managers in its growing team.

Technical positions require a bachelor's degree in computer science, engineering or a related field and relevant industry experience. We particularly seek applicants with experience in areas such as SAP, Oracle, Sybase, MS SQL Server, Java, J2EE, XML, HTML, DB2, COBOL, Linux, .Net Technologies and WebServices.

For our Information Systems and Project Manager positions we prefer an MS degree in related fields such as computer science or engineering and relevant industry experience. We will consider applicants with a relevant bachelor's degree and significant industry experience for these positions.

Our business development managers' responsibilities include developing and managing all business development initiatives for a region in the United States. Qualified applicants will have a technical and/or business /marketing degree (master's preferred) and relevant industry experience.

Positions may require relocation to various client sites throughout the United States. Qualified applicants submit resumes to HR Department, The Tower, 270 Davidson Avenue, Suite 305, Somerset, NJ 08873

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*Acme Packet, Inc. is seeking a*

**SENIOR TECHNICAL SUPPORT ENGINEER**

at its Burlington MA location. Analyze customer problem reports & replicate customer environment to reproduce customer problems in lab environment. Troubleshoot & successfully resolve customer problems by performing open defect analysis & apply debugging techniques. Escalate issues into Engineering organization as required. Manage Soffront database by opening& tracking all trouble tickets, Return Material Authorizations (RMA's), account information, & Maintenance Plans. Work with Soffront vendor on professional/enhancement services. Minimum requirements: Master's Degree (or equivalent) in Engineering or Information Technology, plus four years network engineering experience in VoIP industry. Experience must include: Signaling protocols (H.323, SIP, DTMF, ISDN & SS7); IP protocols (TCP/IP, UDP/IP, ARP & NAT); Protocols analyzer tools (Spectra, Inet, Ethereal, Sniffer Distributed); Security tools (VPN, PIX); and advanced troubleshooting with VoIP softswitches, gateways, gatekeepers & Session Border Controllers. Please mail resumes/cover letters to: Andre Normand, Acme Packet, Inc., 71 Third Avenue, Burlington MA 01803

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Senior Consultant (Addison, TX): Dvlp object-oriented (OO) s/ware systms, apply knowl to dvlp OO artifacts & maintainable/extensible s/ware, support project delivery, & teach curriculums in basic lang & technology use. Req BA or equiv in Comp Sci or related field & 5yrs exp in similar position. Send resume to Job Code 10002006, Valtech Technologies Inc., 5080 Spectrum Dr, Ste. 700 West, Addison, TX 75001.

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Sr. Specialist, eCRF Development (Computer & IS Manager) sought by Novartis Pharmaceuticals Corporation for East Hanover, NJ office. Must possess Master's degree or foreign academic/experiential equivalent in Computer Science and 2 years experience in clinical database design and administration in the pharmaceutical industry, including SAS, Oracle 8.0 (SQL, PL/SQL), Documentum and Clintrial CT4. Respond to: Arlene O'Rourke, Human Resources Dept., Requisition #34159, One Health Plaza, B104/1G3B, East Hanover, NJ 07936. Novartis is an EOE Employer.

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Synerzy Software Solutions Inc., needs Sr Software Engr w/exp in CA Siteminder, CA Identityminder, Red Hat Linux, Windows 2003, Shell scripting, IBM Websphere 5.1, Web Server(Apache, SUN, IIS) Administration ,SunOne LDAP, AD, EJB Security (JAAS), Java, Crystal Report Server,Web Focus, exp. With ADAM (Active Directory Application Mode) is compulsory. Knowledge in Firewall Technologies ,Networking skills is a Plus. Travel and/or relocation required. Send resume & salary ! req. to HR Manager, Synerzy Software Solutions Inc, 1 Austin Ave, 2nd Floor, Iselin, NJ 08830

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**Sr Hardware Engineer**
(Atlanta, GA) HW design & dvplmt of telecom test equip incl board & FPGA levels. FPGA design in schematic & VHDL, hands-on board debug & testing. Req: BS in Electrical Engineering w/ 5 yrs exp in job offered or as a Firmware Engr. Exp must incl 3 yrs in Xilinx FPGA design in VHDL & schematic. Send resume: HR, Sunrise Telecom Broadband, 3250D Peachtree Corners Cir, Norcross GA 30092 (No Phone Calls) EOE. Job Code: BE-SHE-PR.

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**Database Administrator** - to maintain and develop company's web presence and oversee staff involved in database operations. Maintain test and develop internal software systems, databases and networks. Refer to job #TSM-1 and reply to: rick@headsets.com, or mail: Headsets.com, One Daniel Burnham Ct., SF, CA 94109.

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**Programmer Analyst**
(multiple worksites). Analyze, design, develop, test, deploy software using C++, Visual Basic 5.0/6.0, InterDev., SQL Server 2000, XML, XSL, IIS, DTS, Com/Dcom, MTS, Com+, S.O.A.P., Winsock, ADD/RDS, Web Services, Cimplicty, PE/ME, Symbol Active Scan, Visio, Roadnet, PVCS, Tracker, Crystal Reports, iBatch, RsBatch, MSMQ, ADSI, Embedded Visual Basic, Install Shield. B.S. or foreign degree equiv. in Engineering Field or Comp. Sc. + 2yrs programming analysis exp. in C++, Visual Basic, Cimplicty, PE/ME, Symbol Active Scan, iBatch, RsBatch, MSMQ, ADSI, Embedded Visual Basic. Extensive travel. Must have perm. work auth. to work in U.S. Send resume to Intelliquest Systems Inc., 301 Grant St, Suite 4300, Pittsburgh, PA 15219.

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**Systems Analysts** - act as an internal consultant to plan and direct the analysis of functional capacity and complex business IT problems to be solved with computer systems. Refer to Job code BSA, and reply to jobs@avocausa.com or to Avoca LLC, 555 Howard St., 2d floor, SF, CA 94105.

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Lamons Gasket Co. seeks MIS Manager - Application Development to work in Houston, Texas. Must have Bachelor's in Computer Engineering or Computer Science plus 5 yrs. Exp. In job offered or 5 yrs. of related exp. in computer systems management. Fax resume to Anthony Startz at 713-547-9502. Put Job Code MMAD-01 on resume.

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Software Engg. w/MS dgr. or eqvl & 1yr. exp, or B/S & 5yrs., to wk in conj. w/hardware & sftwre. Analysts w/BS or equivl. & 18 mos. exp. Wk. w/web, client svr., appl, and/or system. Use min of 6 of the foll:.Net /C#, Asp.Net, Frmwk, MS/SQL, PL/SQL, Oracle, VB & Java Script, J2EE, JDBC, Rpts, Win & Loadrunner, QTP, Oracle Apps/SAP, ERP, Fin Mod's, Tech/Func, Forms, Cube, ABAP, BIW, Buss. Analysis, Sys. Study, ETL, Informatica, Cognos, Win, Unix, etc for SDLC Resume: Hr. Dept., Core Providers, 4851 Keller Springs Rd #210 Addison, TX 75001

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eTest IT, Inc. in Buffalo Grove, IL seeks IT Quality Assurance Sr. Project Manager. M.S., 2 yrs exp in job or as Performance Test Engineer & exp w/ LoadRunner, TestDirector, QuicktestPro, SiteScope & Hiperformix req'd. Send res: skreynin@etestit.com.

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SYS/DB Admin w/ MS in Comp Sci or related field & min 2 yrs exp wanted by DeSilva & Phillips, NYC. Duties incl: install/maintain MS SQL Server; system backup/restore; Win/AD support; SW & HW deployment & integration; estab/enforce enterprise security policies /procedures. Fax to 212-686-2172.

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e-learning Services Oversees division selling IT e-learning services to European business clients. Must have at least 2 years experience in job offered. Send resume to: CBT Direct, LLC, 25400 US 19 N, Suite 285, Clearwater, FL 33763, Attn. K. Cardinale.

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Sr. E-Learning System Application Administrator: Shall be responsible for supervising design, development and implementation of various applications for the school's I.T. system, including, but not limited to, database, web presence, e-learning, student/parent access to web and network system. Shall use SQL Server, Oracle, ASP, ADO, VB, Com, HTML, IIS, Java Script, Mathematica and Web Mathematica. Must have a Masters (foreign equiv. acceptable) in Computer Science with 3 yrs of I.T. exp. 2 yrs. of exp. in all above skills. Location: Lawrenceville, NJ. Send resume. Attn. Timothy Cottrell, CIO, The Lawrenceville School, 2500 Main Street, Lawrenceville, NJ 08648.

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Information Technology/ Systems Mgr, Gainesville, FL - Oversee information systems & networks linking 3 area offices. MS in Elec. Eng. or related field or BS in Elec. Eng. or foreign equiv. plus 5 years progressively more responsible experience in field. 40 hrs/wk, 8 AM - 5 PM, M - F. Salary commensurate with exp. Resume to: Florida Property Consultants Group, 2931 Kerry Forest Parkway, Suite 201, Tallahassee, FL 32309

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Software Eng wanted by Torc Financial, LLC -Phila PA, w/MS Comp Sci or related field & min 2 yrs SW devlpmt exp. Design SW arch; develop front-end interface & back-end server; enhance system security, performance & scalability. Send resume to denise@centurionsecurities.com or fax to 215-446-7045.

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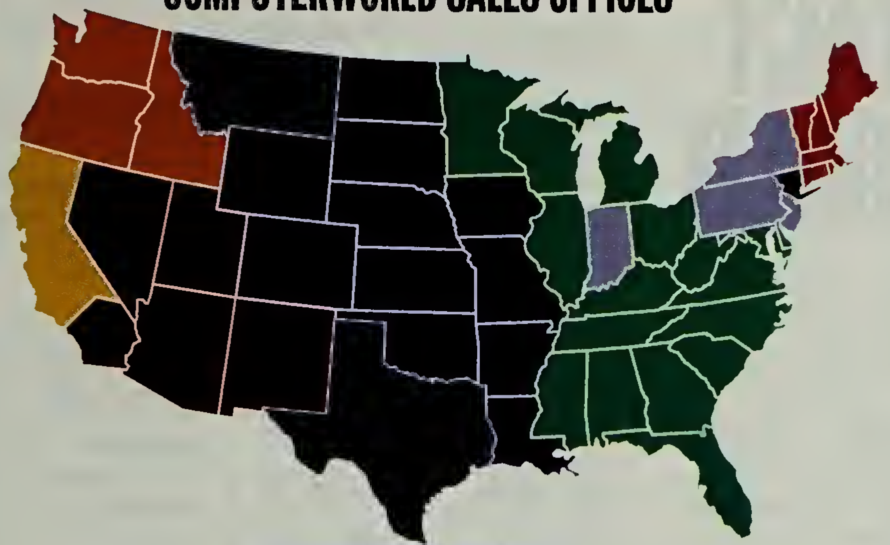

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| | |
|---|---|
| AT&T<br>www.TheNewATT.com | 64 |
| Avaya<br>www.avaya.com | 11 |
| C2 Consulting<br>www.developingtechnicalleaders.com | 33 |
| Cisco<br>www.cisco.com | 53 |
| dtSearch<br>www.dtsearch.com | 56 |
| EMC<br>www.emc.com | 9, 45* |
| FileNet<br>www.filenet.com | 15 |
| Gateway<br>www.gateway.com | 2-3 |
| IBM Cross Server<br>www.ibm.com | 35, 37 |
| IBM Software<br>www.ibm.com | 49, 51 |
| IBM System Seller<br>www.ibm.com | 21 |
| Insight<br>www.insight.com | 7 |
| INTEROP Las Vegas<br>www.interop.com | 46 |
| InterSystems<br>www.intersystems.com | 19 |
| Microsoft Security<br>microsoft.com/getthefacts | 28 |
| Motion Computing<br>www.motioncomputing.com | 31 |
| MRO Software<br>www.maximoit.com | 47 |
| Network Instruments<br>networkinstruments.com/voip | 56 |
| Network World<br>www.nww.com | 24/25* |
| Novell<br>www.novell.com | 39 |
| Oracle Corp.<br>www.oracle.com | 17, 41 |
| Ricoh<br>www.ricoh-usa.com/itchannel | 23 |
| SAS<br>www.sas.com | 26-27 |
| Sharp<br>www.sharpusa.com | 42 |
| SNW Spring Conference 2006<br>www.snwusa.com | 32/33 |
| Sun Microsystems<br>www.sun.com | 63 |
| Sybase<br>www.sybase.com | 4 |
| Websense<br>www.websense.com | 55 |
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Page number refers to page on which story begins. Company names can also be searched at **www.computerworld.com**

ACTIONAL CORP. .... 22
ADAMS AND REESE LLP .... 14
ADVANCEO MICRO DEVICES INC. .... 6
AFFILIATED COMPUTER SERVICES INC. .... 6
AGILENT TECHNOLOGIES INC. .... 14
AMAZON COM INC. .... 2S, 47, 48
AMERICA ONLINE INC. .... 30
AMERICAN MEDICAL RESPONSE .... 20
APPLE COMPUTER INC. .... 44
ARCHDIOCESE OF PHILAOELPHIA .... 6
AUTODESK INC. .... S4
AVAYA INC. .... 20, 61
BACON'S INFORMATION INC. .... 50
BEA SYSTEMS INC. .... 14
BLUE CROSS AND BLUE SHIELD OF LOUISIANA .... 14
BOOZ ALLEN HAMILTON INC. .... 48
BOSE CORP. .... 44
BOSTON UNIVERSITY .... S0
BRAINSTORM GROUP INC. .... S4
BROCADE COMMUNICATION SYSTEMS INC. .... 30
BURTON GROUP .... 32, 61
CA INC. .... 23
CALIFORNIA STATE AUTOMOBILE ASSOCIATION .... 44
CAR-FRESHNER CORP .... 6
CATHOLIC HUMAN SERVICES .... 6
CENTER FOR INFORMATION POLICY LEADERSHIP .... 8
CHINESE MINISTRY OF INFORMATION INDUSTRY .... 18
CHOICEPOINT INC. .... 8
CIPHERTRUST INC. .... 34
CISCO SYSTEMS INC. .... 10, 14, 30, 61
CITRIX SYSTEMS INC. .... 61
COLUMBIA .... 34
CONTROL DATA CORP. .... 44
COREL CORP. .... 24
CRAY INC. .... 36
CREDANT TECHNOLOGIES INC. .... 10
OASSAULT SYSTÈMES SA .... 14
DATAVELOCITY INC. .... 10
EARTHBOUND FARM .... 44
EBAY INC. .... 44, 48
ECLIPSE FOUNDATION INC. .... 22
ELI LILY & CO. .... 8
EMC CORP. .... 30
EMORY UNIVERSITY .... 8
ENTERPRISE MANAGEMENT ASSOCIATES .... 31
FEDERAL TRADE COMMISSION .... 8
FIDELITY BANCSHARES INC. .... 34
FIDELITY INVESTMENTS .... 48
FORRESTER RESEARCH INC. .... 52, 54
FUEGO INC. .... 14
GARTNER INC. .... S2
GATEWAY INC. .... 10
GEORGIA-PACIFIC CORP. .... 50
GILSBAR INC. .... 14
GOOGLE INC. .... 48
GRAMEEN PHONE LTD. .... 44
GUARDIAN LIFE INSURANCE COMPANY OF AMERICA .... 14
H.J HEINZ CO. .... 47
HANCOCK BANK .... 16
HARMONY INFORMATION SYSTEMS INC. .... 6
HARVARD BUSINESS SCHOOL .... 54
HARVARD LAW SCHOOL .... 22
HERMAN MILLER INC. .... 44
HEWLETT-PACKARD CO. .... 10, 18 .... 30, 44
HITACHI DATA SYSTEMS CORP. .... 30
HON HAI PRECISION INDUSTRY CO. .... 18
HONEYWELL INTERNATIONAL INC. .... 52
HORISON INFORMATION STRATEGIES .... 29
IBM RESEARCH .... 36
IBM .... 10, 18, 22, 23, 24, 36, 40, 61
ICEX INC. .... S0
IDC .... 30, 32
IDEO INC. .... 47, 48
IENTERPRISES INC. .... 10
IG METALL .... 6
ILLUMINATA INC. .... 20
INFORMATICA CORP. .... 18
INFORMATION TECHNOLOGY ASSOCIATION OF AMERICA .... 20
INGRES CORP. .... 23
INNOBASE OY .... 18
INNOSIGHT LLC .... 44
INNOVATION NETWORK .... 44, 47
INTEL CORP. .... 6, 18, 36
INTERBASE SOFTWARE CORP. .... 18
INTERNATIONAL ASSOCIATION OF PRIVACY PROFESSIONALS .... 8
INTERNATIONAL TRADE COMMISSION .... 10
IPOLICY NETWORKS INC. .... 10, 38
JBOSS DEUTSCHLAND GMBH .... 18
JBOSS INC. .... 18
JETBLUE AIRWAYS CORP. .... 47, 48
KEESLER FEDERAL CREDIT UNION .... 14
KROLL INC. .... 22
LAWRENCE LIVERMORE NATIONAL LABORATORY .... 36
LENOVO GROUP LTO. .... 24
LEWIS AND ROCCA LLP .... 8
LIVE OAK INTERACTIVE .... 61
LM ERICSSON TELEPHONE CO. .... 18
LOTUS SOFTWARE GROUP .... 61
LOUISIANA STATE UNIVERSITY .... 16
LSI LOGIC CORP. .... 40
M.S. RAU ANTIQUES LLC .... 16
MATRIXONE INC. .... 14
MAXXAN SYSTEMS INC. .... 31
McDATA CORP. .... 30
McGILL UNIVERSITY .... S4
MEADWESTVACO CORP. .... 6
MEDCO HEALTH SOLUTIONS INC. .... 8
MERCURY INTERACTIVE CORP. .... 40
MICROSOFT CORP. .... 8, 22, .... 24, 48, 61
MISSOURI STATE UNIVERSITY .... 1
MIT SLOAN SCHOOL OF MANAGEMENT .... 54
MIT .... 20, 44
MOBILE ANTIVIRUS RESEARCHERS ASSOCIATION .... 38
MYSQL AB .... 18, 23, 61
NATIONWIDE MUTUAL INSURANCE CO. .... 8
NEC CORP. .... 18
NETFRASTRUCTURE INC. .... 18
NEW SOUTH WALES DEPARTMENT OF EDUCATION AND TRAINING .... 18
NIKE INC. .... 44
NORFOLK SOUTHERN CORP. .... 29
NORTEL NETWORKS LTD. .... 61
NORTHROP GRUMMAN CORP. .... 16
NORTHWESTERN UNIVERSITY .... 54
NOVELL INC. .... 22
NTP INC. .... 6
OBJECTONE GMBH .... 18
OCHSNER CLINIC FOUNDATION .... 16
OFFICE OF THE INSPECTOR GENERAL .... 14
ORACLE CORP. .... 10, 14, 18 .... 23, S2, 61
ORGANIZATION FOR THE ADVANCEMENT OF STRUCTURED INFORMATION STANDARDS .... 24, 40
ORIGINAL SOFTWARE LTD. .... 10
OVUM LTD. .... 22
OXO INTERNATIONAL LTD. .... 44
PALISADE SYSTEMS INC. .... 34
PARASOFT CORP. .... 40
PARITY COMMUNICATIONS INC. .... 22
PARTNERS HEALTHCARE SYSTEM INC. .... 43
PEOPLECUBE .... 40
PEREGRINE SYSTEMS INC. .... 10
PERPETUAL ENTERTAINMENT INC. .... 34
PITNEY BOWES INC. .... 44, 48
PMC-SIERRA INC. .... 14
PORTAUTHORITY TECHNOLOGIES INC. .... 34
PROGRESS SOFTWARE CORP. .... 22
PROOFPOINT SYSTEMS INC. .... 34
PROVIDENCE HEALTH SYSTEM .... 22
PROVIOENCE HOME SERVICES .... 22
PRTM MANAGEMENT CONSULTANTS .... 50
PRUDENTIAL AMERICANA GROUP REALTORS .... 34
RACKSPACE LTD. .... 16
RAYMOND JAMES FINANCIAL INC. .... 32
RED HAT INC. .... 18
RESEARCH IN MOTION LTO. .... 6, 44
RETAIL INDUSTRY LEADERS ASSOCIATION .... S2
RICE UNIVERSITY .... 36
SAFEWAY INC. .... 44
SALESFORCE.COM INC. .... 10
SAMSUNG ELECTRONICS CO. .... 18
SAN DIEGO SUPERCOMPUTER CENTER .... 30
SATYAM COMPUTER SERVICES LTO. .... 18
SAVVICA INC. .... 1
SCIENTIFIC-ATLANTA INC. .... 10
SENSAGE INC. .... 18
SIEMENS AG .... 61
SLEEPYCAT SOFTWARE INC. .... 18
SMARTEAM CORP. .... 14
SONIC SOFTWARE CORP. .... 22
SONY CORP. .... 18
SONY NEC OPTIARC INC. .... 18
SOUTHWEST FOUNDATION FOR BIOMEDICAL RESEARCH .... 20
STARWOOD HOTELS & RESORTS WORLDWIOE INC. .... 22
STATE STREET CORP. .... 48
STONE YAMASHITA PARTNERS .... 44, 47
STRONGAUTH INC. .... 8
SUN MICROSYSTEMS INC. .... 20, 24
SUNGARD DATA SYSTEMS INC. .... 16
SYBASE INC. .... 61
TABLUS INC. .... 34
TALLEY DEFENSE SYSTEMS INC. .... 6
TELESPHERE LTD. .... 61
TEXAS INSTRUMENTS INC. .... 18
THE AMERICAN RED CROSS .... 20
THE APACHE SOFTWARE FOUNOATION .... 23
THE CENTER FOR INFORMATION DEVELOPMENT MANAGEMENT .... 54
THE CONFERENCE BOARD .... 54
THE DEFENSE ADVANCED RESEARCH PROJECTS AGENCY .... 36
THE MEN'S WEARHOUSE INC. .... 52
THE PROCTER & GAMBLE CO. .... 8, 44, S2
TIVOLI SOFTWARE .... 22
TULANE UNIVERSITY .... 14
U.S. ARMY .... 20
U.S. DEPARTMENT OF EDUCATION .... 14
U.S. DEPARTMENT OF JUSTICE .... 14
U.S. DEPARTMENT OF STATE .... 20
U.S. PATENT AND TRADEMARK OFFICE .... 24
UNIVERSITY OF CALIFORNIA .... 14
UNIVERSITY OF CALIFORNIA, SAN DIEGO .... 30
UNIVERSITY OF NEW ORLEANS .... 16
UNIVERSITY OF SOUTHERN CALIFORNIA'S MARSHALL SCHOOL .... 54
UNIVERSITY OF TENNESSEE .... 36
URS CORP. .... 14
VERIZON COMMUNICATIONS INC. .... 40
VIRGIN GROUP LTO. .... 44
VONTU INC. .... 32
W.L. GORE ASSOCIATES INC. .... 48
WAINHOUSE RESEARCH LLC .... 61
WELLS FARGO & CO. .... 44
WILEY, REIN & FIELDING LLP .... 8
XKOTO INC. .... 61
YANKEE GROUP RESEARCH INC. .... 61
ZEND TECHNOLOGIES LTD. .... 61

# Cisco, Avaya Back Standards On Unified Communications

## Network rivals expand their support for SIP, boosting VoIP interoperability

**BY MATT HAMBLEN**

AT THE VoiceCon Spring 2006 conference this week, rivals such as Cisco Systems Inc. and Avaya Inc. are poised to announce support for each other's IP communications technologies under the banner of the Session Initiation Protocol and other open standards.

For example, Cisco today will announce native support for SIP as part of its new Unified Communications system. That capability will enable newer Cisco IP phones to work with third-party applications such as IBM's Lotus Sametime and Microsoft Corp.'s Live Communications Server 2005.

Separately, Citrix Systems Inc. will announce plans to use SIP to integrate its network and application access tools with Cisco's communications software.

And Avaya will introduce a version of its Converged Communications Server that supports a broader range of SIP endpoints, including IP phones from Cisco. Avaya also plans to announce that it's working with about 50 companies, including Citrix, to develop communications applications based on SIP and other standards.

### More Cooperation

After years of selling voice-over-IP products that didn't interoperate with one another, vendors are starting to cooperate more closely to bring voice, video and presence-awareness technologies to corporate desktops and handheld devices, analysts said.

"We're starting to hit that wave where interoperability and partnerships will define the long-term winners and losers," said Zeus Kerravala, an analyst at Yankee Group Research Inc. in Boston.

Cisco's new technology integrates voice, data and video in one system, said Barry O'Sullivan, vice president and general manager of the company's voice technology group.

The Unified Communications system will be sold under a per-user model, or its various components can be purchased separately, O'Sullivan said. New components include software that can aggregate user presence information on a network and from third-party devices, and an application that lets end users place voice and video calls by clicking on system icons or names that are contained in instant messages.

Randy Cook, director of global voice networks at Oracle Corp., said he plans to upgrade major portions of his VoIP network in the next six months to Cisco's Unified CallManager 5.0 release and other components of the Unified Communications offering.

About 30,000 Oracle workers already use Cisco IP phones, and Cook said the company plans to expand the VoIP system to its entire 60,000-person workforce over the next 18 months.

Cook said he looks forward to having SIP functionality throughout the network and down to each phone. Cisco is "moving in the direction we've asked for and want," he said.

Telesphere Ltd., a provider of IP telephony managed services in Scottsdale, Ariz., has been using Unified Communications internally for the past four months and began deploying the technology to its customers last month, said CEO Dave Thomas. The SIP-based presence capabilities can help users quickly locate co-workers in other offices worldwide, Thomas said.

Although Cisco and Avaya will make news at VoiceCon, which starts today in Orlando, analysts said that Siemens AG and Nortel Networks Ltd. have had unified communications strategies for a while, but with some capability gaps.

"The really unique thing Cisco has done is to create a unified communications platform that it can deliver on its own," said Brent Kelly, an analyst at Wainhouse Research LLC in Duxbury, Mass. ▸

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*Continued from page 1*

# Databases

of IBM's new DB2 Express-C database. They are managed by a load-balancing application from Xkoto Inc., which is also based in Toronto. "DB2 Express-C just feels like a much more profound piece of software," Green said.

Defections such as Savvica's are heartening to IBM, Microsoft Corp. and Oracle Corp., which in the past six months have all released so-called express databases that are available to users free of charge. In doing so, they have followed the lead of Sybase Inc., which released an express version of its corporate database in September 2004.

The express databases are "significantly challenging the conventional wisdom about commercial vs. open-source databases," said Peter O'Kelly, an analyst at Burton Group in Midvale, Utah.

The commercial vendors are also opening a second front by working to get support for their databases in application frameworks that are popular with open-source users. For example, Zend Technologies Ltd. last week released software that lets developers use the PHP scripting language to write applications that can interact with any of Oracle's flagship 10g databases.

"IBM and Oracle are doing something similar to what MySQL has done: win the hearts and minds of developers by giving them easier access to technologies," said Mike Pinette, vice president of business development at Cupertino, Calif.-based Zend.

Oracle said hundreds of thousands of developers and students have downloaded its Oracle Database 10g Express Edition since the software was released for beta testing in October. The free database, known as XE, became generally available last week.

According to IBM, DB2 Express-C was downloaded about 50,000 times in the first two weeks after its release in late January.

In contrast, Version 5.0 of MySQL has been downloaded more than 6 million times since October, said Zack Urlocker, vice president of marketing at MySQL AB's U.S. offices in Cupertino. "Sure, the express versions are free, but they come with very significant limitations, especially the lack of support," he said. "No enterprise customer will go into production with a database that cannot be supported."

MySQL user Andy Meadows said he hasn't been tempted to switch. "Unless it's a large CRM or identity management system, I've found MySQL to be robust and scalable enough," said Meadows, president of Live Oak Interactive, a Web development and hosting firm in Round Rock, Texas.

On the other hand, Rajeev Kaula, a professor in Missouri State's information systems school, said Oracle's XE is easier to install than earlier "lite" Oracle databases and is helping him teach students to program more efficiently.

"Students who honed their skills on MySQL and PHP tend to treat databases only as a way of storing tables," Kaula said. Learning on Oracle XE, "they are realizing the power of transferring the business logic to the database itself."

Savvica's Green said he has received a lot of inquiries from IT peers who previously weren't aware that they could install free versions of SQL Server, Oracle or DB2 as alternatives to open-source databases.

"Frankly, these products are better," Green said. "As more people hear about them, I think they will start to eat MySQL's lunch." ▸

### Express Databases

| VENDOR | PRODUCT | RELEASE DATE | CLAIMED DOWNLOADS |
|---|---|---|---|
| **Sybase** | ASE Express Edition for Linux | September 2004 | 45,000 |
| **Microsoft** | SQL Server 2005 Express Edition | October 2005 | Not available |
| **Oracle** | Oracle Database XE | October 2005 in beta; general release last week | "Hundreds of thousands" |
| **IBM** | DB2 Express-C | January | 50,000 in first two weeks |

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FRANK HAYES ■ FRANKLY SPEAKING

# Innovate Big

HERE'S a secret of successful innovation: Change big, not small. No, that doesn't just mean you should think big when it comes to innovations. It means literally that you should *only* make big changes. Leave small things the same, and you'll be better off. And your users will be *much* better off.

Want proof? Just take a careful look at your cell phone. Or your car's dashboard. Or your kitchen sink.

And if you're still not convinced, ask users what they hate most about the changes that IT forces down their throats.

But let's start with your cell phone. Compared with the clunky desk telephone you probably remember from a decade or two ago, it's tiny and immensely more sophisticated in design. Almost everything is different from that old clunker.

Except one thing: There are still the same four rows of keys: 1 2 3, 4 5 6, 7 8 9, * 0 #.

The keys may have funny shapes. They may be virtual keys on a touch screen. But it's the same 12 keys in the same setup.

Why not three rows of four, or two rows of six, or turned upside down like a calculator keypad? The key arrangement would be the smallest, cheapest and easiest thing to change.

But that would break users' dialing habits. It would slow them down. Eventually, they'd trash that oddball cell phone for one that isn't such a pain to use — one with a regular set of keys.

Your car's speedometer probably has an indicator that moves from left to right (or, if it's circular, moves clockwise) to tell you you're speeding up. That's the way it's been for decades, though nearly everything else in the instrument panel has changed. Why not right to left or counterclockwise? Because that small shift would break drivers' critical ability to read the speedometer.

Kitchen sinks in the U.S. have hot water on the left and cold on the right. That's true whether you run water by twisting faucet handles, pulling a knob or moving a joystick-like lever. It doesn't have to be. But anyone who's ever been scalded by plumbing set up the opposite way knows why left hot/right cold is a valuable standard.

Now let's talk about users. What drives them nuts about new systems? Broken habits. Users can take major process changes in stride. But keyboard shortcuts that no longer work, buttons that no longer do what users expect, defaults that have changed — they all create errors when users try to keep working the same old way on new software or hardware. And if the systems can't be adjusted to accommodate users' habits, the habits have to go.

Users hate that. And they're right to hate it. Broken habits aren't just an inconvenience. Habits are part of a user's work process. And a smoothly running process means productivity. Break users' habits, and you've broken the process, spiked productivity and forced users to develop new habits. That takes weeks at best, and months if the old habits are deeply embedded.

That's the price of small-scale innovation. It's a price that can be measured in lower productivity and higher training and support costs, user dissatisfaction and damage to IT's reputation.

Look, IT people like little innovations. They're easy and cheap — for us. But for users, those small, cosmetic "improvements" can be pure misery. And too often we ignore just how much they really cost.

Is there a benefit to your innovation so big that it's worth that price? Then go for it. Never underestimate how disruptive small changes can be, but never let that prevent changes that are really necessary.

But if there's no real benefit to a small change, don't do it. In fact, work hard to keep those small-scale, user-level details the same. You'll have happier, more productive users and an easier time supporting them.

So innovate big. Aim for benefits that will cut costs, raise productivity and maybe even give your organization a real competitive advantage.

And leave the small stuff alone. ▸

**FRANK HAYES,** *Computerworld*'s senior news columnist, has covered IT for more than 20 years. Contact him at **frank_hayes@computerworld.com.**

## I Did It Myyyyy Way

A user calls IT and asks to have some reports reprinted. "These lists are printed once a quarter and consist of 10,000 pages, with an average of two pages per client," says pilot fish who fields the call and orders the reprinting. "The lists are also on our intranet as PDF files. Two days later, I saw that user in the hall pushing a cart filled with paper. Aren't those the lists I got for you two days ago? I asked. "Yes," he responded, "but I only need the lists of a single client. I'm bringing these to the shredder."

SHARK TANK

### Aha!

Pilot fish can't log in to get his e-mail one morning, and he figures he needs his password reset, as usual. But instead, the help desk opens a trouble ticket and promises to send a tech out right away. "About 2:30 p.m. the tech shows up," grumbles fish. "He spends half an hour checking the setup and reinstalling software. The system still refuses to authenticate. Finally, he calls the e-mail guru. After a short conversation, he hangs up, turns to me and says, 'Your server has been down all day.' "

### Completeness

It's the early 1990s, and this Cobol developer pilot fish skips lunches and works late nights and weekends to finish 18 similar reports that one department says are needed urgently. A few weeks later, fish asks a user how the reports are performing. "The user told me they only wanted a couple of the reports, but they had asked for all 18 because they were undecided which would be the most useful," says stunned fish. "They were running two of them and mothballed the other 16, never to be used again."

### Tradition

Users in this purchasing department are accustomed to pulling data off the minicomputer, pasting it into a spreadsheet and then using a calculator and manually typing in the result, reports a pilot fish on the scene. "The new IT director sees them going through that procedure and shows them how to let the spreadsheet do the calculating for them. Their response? "Thank you, but how do you know the totals are correct?"

### Brevity

Developer pilot fish and his cohorts can't figure out why their new manager keeps visiting their cubes and asking for information they've already sent him by e-mail. "We finally confronted him to find out why," says fish. "What's the deal? we asked. He rather defiantly told us that he refuses to read any e-mail over one line long."

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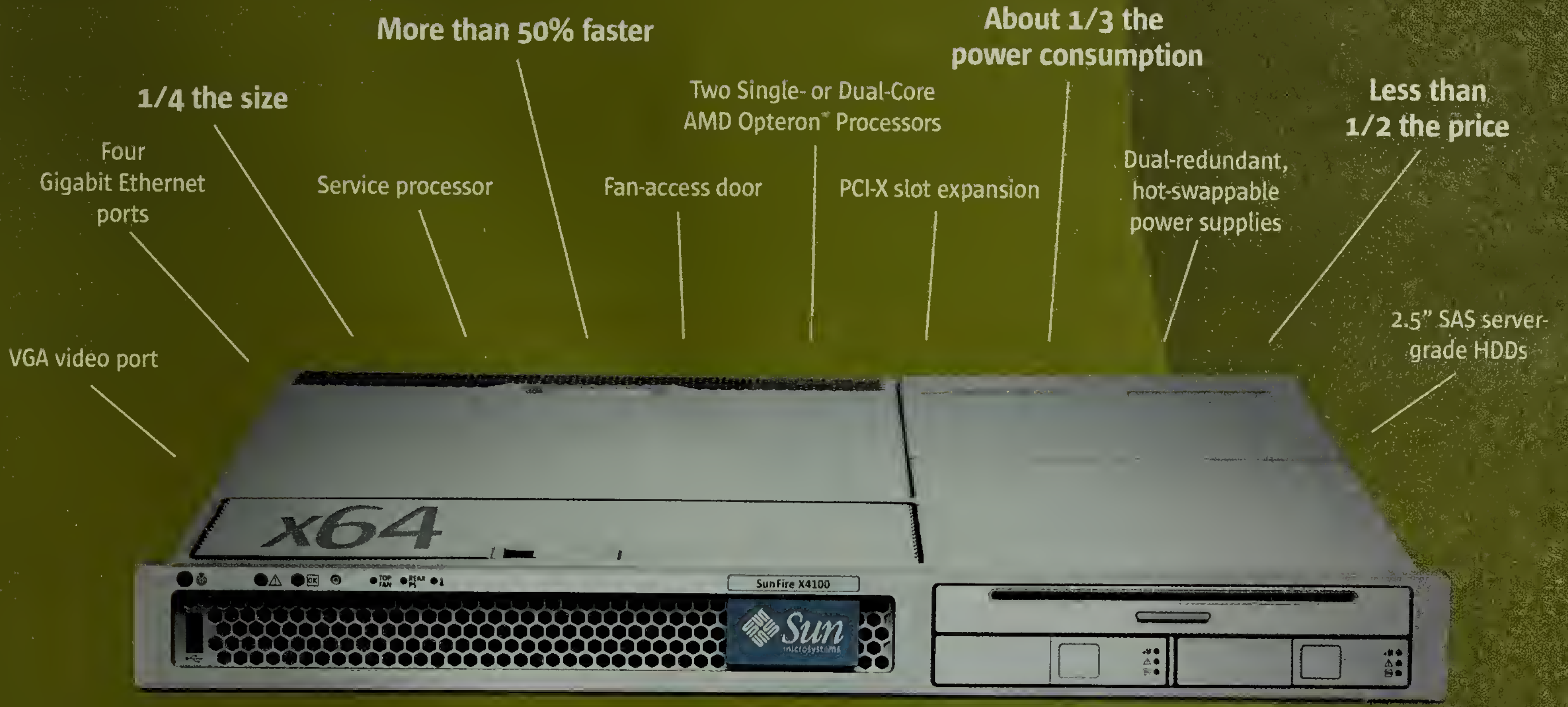
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